

BUSINESS WEEK

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NMTBA's Hollengreen: At the show, the tools are starting to think (page 41)

A MCGRAW HILL PUBLICATION

SEPT. 3, 1955

E. B. POWER
UNIVERSITY MICROFILMS
313 N. 1ST ST. 2-C
ANN ARBOR RICH



Now any man can be king

In ancient times, the ordinary man would have been risking his life had he dared to wear purple. Derived with great labor from a Mediterranean mollusk, purple dye was so hard to come by that its use was restricted to royalty.

Now anyone can wear any color. Chemists, compounding hues to fit any mode in textiles, have cracked Mother Nature's monopoly on making dyes. For this purpose

they have at their command an infinite range of chemicals, including the common solvent, *acetone*.

No other solvent is so widely used to dissolve such a variety of materials, in addition to those used in textile dyes. Acetone is more than a solvent; it is a basic raw material of industry. Making pure acetone from petroleum is one of Shell Chemical's contributions to modern textiles.

Shell Chemical Corporation
Chemical Partner of Industry and Agriculture

NEW YORK



RESEARCH KEEPS

B.F. Goodrich

FIRST IN RUBBER



It takes coal on a $\frac{1}{2}$ -mile flight

A typical example of B. F. Goodrich improvement in rubber

HERE'S where electric power is made for an atomic energy project in Kentucky. A network of nearly 3 miles of B. F. Goodrich conveyor belts, going in 4 directions at once, keeps coal flowing into the plant. They carry 1400 tons an hour. One belt goes over towers 50 feet high, over a road and a river channel; some climb steep grades; others tunnel underground.

Getting the coal from river barges to the plant—a half mile away—was a special problem. B. F. Goodrich engineers knew that an ordinary belt, of rubber and fabric, couldn't handle the heavy loads, at this distance. So

they recommended a B. F. Goodrich *cord* belt. It's made with cords, running lengthwise, held in place by rubber. The tough cords add strength and load-carrying power, so a single belt can travel distances once considered impossible.

The cords make it a more flexible belt, so it troughs perfectly whether fully loaded or running empty. The cord belt lasts longer, too. It has 2 to 6 times the impact resistance of a rubber-and-fabric belt. This means it can take crashing blows that would cut, gouge and break an ordinary belt. And cords-sealed-in-rubber, plus special chemi-

cals, give the belt double protection against mildew and rot.

B. F. Goodrich cord belts nearly always outlast other types on tough jobs where severe operating conditions call for the best and most modern belt construction. Let your B. F. Goodrich distributor show you how this longer belt life, this ability to stand harder use, can reduce your belting costs per year, make other savings in operating and maintenance costs. *The B. F. Goodrich Co., Dept. M-476, Akron 18, Ohio.*

B.F. Goodrich
INDUSTRIAL PRODUCTS
DIVISION



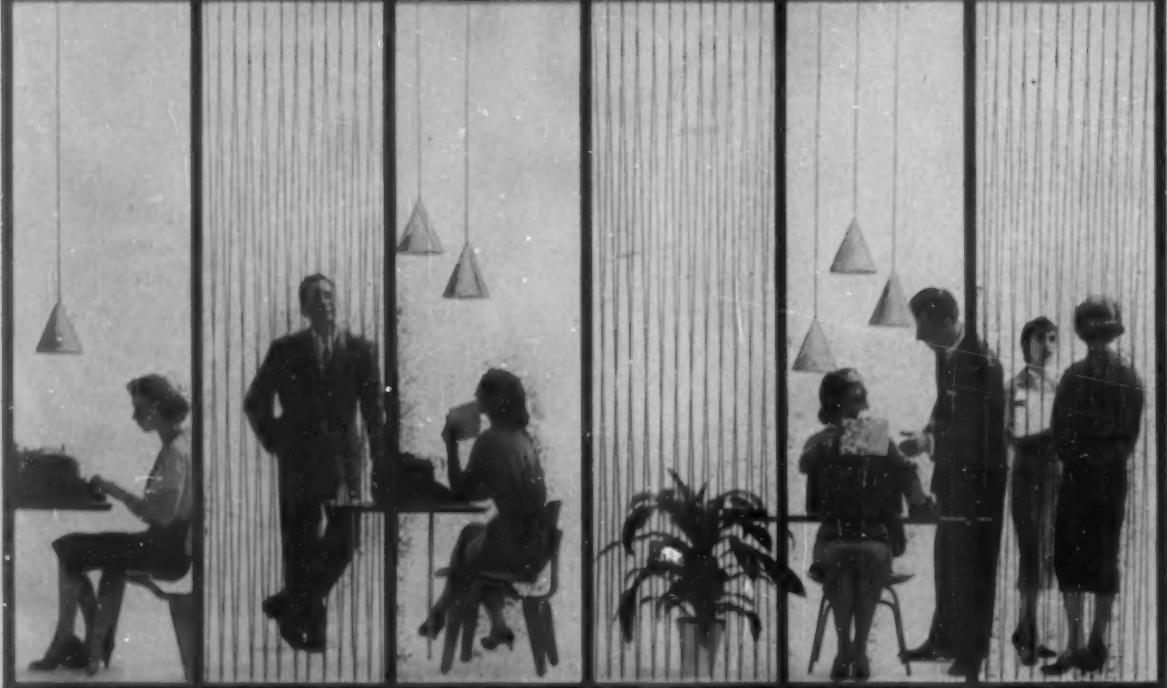
The Remington Noiseless



The Remington Electric



The Remington Standard



You can count on Remington Rand to recommend just the right typewriter for your business needs...only we make all **three**...from the exquisite-letter producing Remington Electric through the unbelievably easy-handling Remington Standard to the amazingly quiet exclusive Noiseless!

Remington Rand DIVISION OF SPERRY RAND CORPORATION

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BUSINESS WEEK • Sept. 3, 1955

AIR-MAZING FACTS

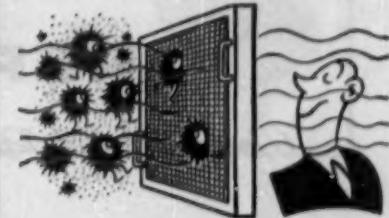
BY O. SOGLOW



DUST CAN BE GOOD FOR YOU! The puffed cereal you enjoy at breakfast is really edible dust! Live steam pulverizes cereal grains into fine dust particles and starch binds them together to form puffed cereal. But the dust that machinery eats spoils its digestion . . .



DUST SURRENDERS! Damaging dust can't get into vacuum pumps equipped with Air-Maze closed-circuit Multimaze filters. Multimaze filters remove practically all abrasive dust and grit. They're easily serviced—of all-metal construction.



BAD AIR GETS FRESH START! Air-Maze air filters keep damaging dust and grit out of hotels, office buildings, stores — wherever clean air is required. Available in a large variety of types and sizes including unit panels, rotating curtains and self-washing electrostatic precipitators.

IF YOU BUILD OR USE engines, compressors, air-conditioning and ventilating equipment, or any device using air or liquids — the chances are there is an Air-Maze filter engineered to serve you better. Representatives in all principal cities. For condensed product catalog, write Air-Maze Corporation, Dept. C, 25000 Miles Rd., Cleveland 28, Ohio.

AIR-MAZE
The Filter Engineers

AIR FILTERS • SPARK ARRESTERS • LIQUID FILTERS
SILENCERS • OIL SEPARATORS • GREASE FILTERS

ELECTRUNITE SAVING 9¢ PER INCH

Clamp-type air and hydraulic cylinders made by Carter Controls, Lansing, Illinois, make many manufacturing operations automatic. Typical might be toggle operations, spring motion returns, die-set strippers, multiple holding and clamping.

One model of this low-cost, all-purpose cylinder delivers a two-inch stroke through a 2.4-inch steel air-cylinder body. For these bodies, Carter Controls had been using tubing made by a different method. A switch to Republic ELECTRUNITE® Electric Resistance Welded Tubing eliminated expensive ball sizing and burnishing for one thing. Since the ball sizing could only be done in short lengths, it was necessary to cut the tube prior to balling.

Now, Republic ELECTRUNITE Mechanical Tubing

is purchased in long lengths and automatic screw machine production is practical.

The result of all this is that the air-cylinder body made of Republic ELECTRUNITE Steel Tubing shows a gross manufacturing saving of more than nine cents an inch!

Republic ELECTRUNITE Mechanical Tubing is consistently uniform in wall thickness, tolerances, roundness and surface finish. It is *precision* tubing on a production basis in every sense of the word, available in both carbon steel and in stainless steel analyses.

Write Republic your problem in any tubular or cylindrical part. Let's see where we can help you save . . . pennies or dollars.

REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products

REPUBLIC STEEL CORPORATION

3136 East 45th Street
Cleveland 27, Ohio



Saving money interests me.
Send facts showing how your products can help.

<input type="checkbox"/> ELECTRUNITE Steel Tubing	<input type="checkbox"/> Republic Cold Drawn Carbon Corrected Bars
<input type="checkbox"/> Republic Electro Paintlok	<input type="checkbox"/> Republic ENDURO® Stainless Steel

Name. _____ Title. _____

Firm. _____

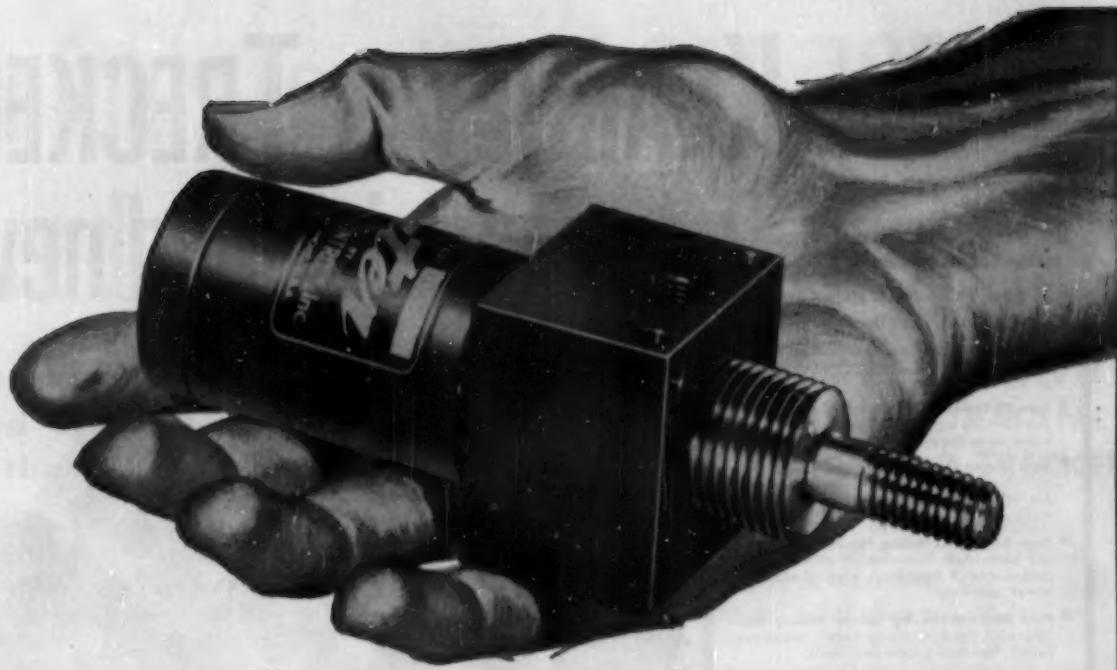
Address. _____

City. _____ Zone. _____ State. _____

K-4705



COSTS CUT 8%. That's the result of using Republic Electro Paintlok for these traveling poster frames, manufactured by The Yardeer Manufacturing Co., Toledo, Ohio. Electro Paintlok is Republic's zinc-coated sheet steel that's chemically treated to take paints, lacquers and synthetic enamels . . . and to hold them for years. It cuts pre-paint cleaning and degreasing costs, welds readily, is easy to fabricate. If you paint on steel write for facts about Republic Electro Paintlok.



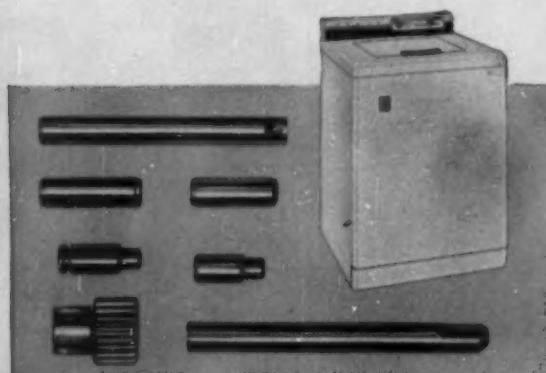
THE OLD WAY

1. Cut to length.
2. Size and burnish inside surface by pressing ball through tube.
3. Thread short lengths which are subject to distortion.
4. Cost ratio: 214



THE ELECTRUNITE WAY

1. Feed long lengths of precision ELECTRUNITE Tubing into automatic screw machine; roundness is unaffected by cutoff and threading.
2. Cost ratio: 100



NORG REDUCED COSTS 16% on automatic-washer parts. They did it by switching to Republic Cold Drawn Carbon Corrected Steel, and eliminated a costly carburizing operation. Machinability is good and quality of the parts improved. Republic's carbon correction restores carbon lost during hot rolling, restores it right out to the edge of the bar. No need to buy oversize bars to allow for surface removal. Norg saves both metal and money. You can, too. Write Republic.

HERE, REPUBLIC ENDURO STAINLESS STEEL DIDN'T SAVE, IT EARNED! Wouldn't you spend \$9 to make \$40? Flexible Manufacturing Company did just that when it switched to Republic ENDURO Stainless Steel as the material for public rental lockers. Compared with previous costs for painted lockers, ENDURO cost about 9% more. But, the bright, attractive stainless steel attracts 25% to 40% added revenues. ENDURO is bright, attractive, easy to care for. You can't wear it out. Neither can high traffic locations. Republic will help you apply it advantageously, economically. Send coupon.

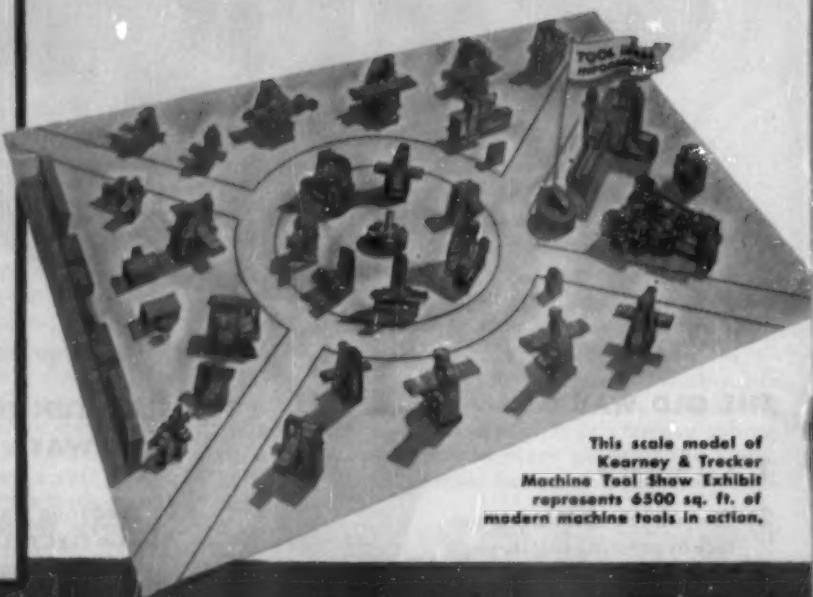


KEARNEY & TRECKER

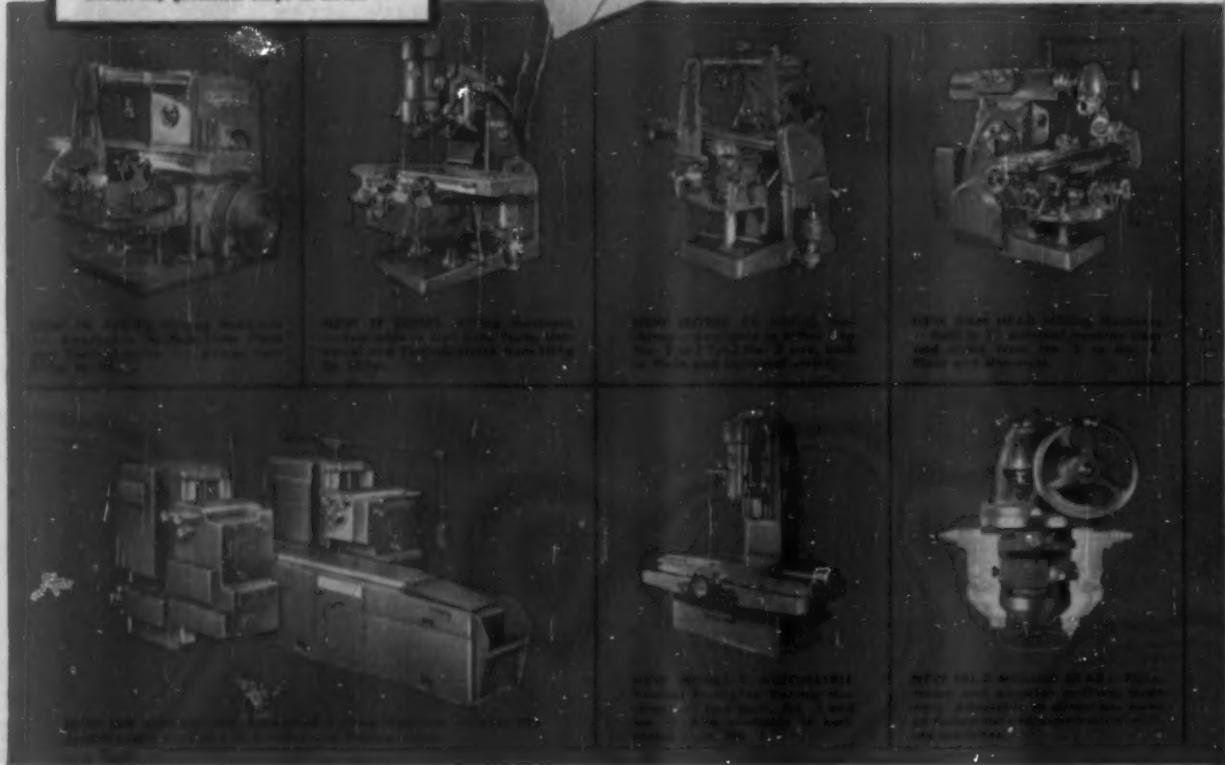
expansion and new

See these outstanding
machines in Booth 508

- ★ **New TK Series Milling Machines** — incomparably modern citans of general purpose production!
- ★ **New TF Series Milling Machines** — strikingly new models featuring remarkable twin-screw knee support.
- ★ **New Model CE Milling Machines** — the simplified, precision-built, economy producer for schools, maintenance and small tool work.
- ★ **New Ram Head Milling Machines** — versatile performers featuring combination arrangements of horizontal, vertical and universal spindles.
- ★ **New Mil-waukoo-Mil Series Milling Machines** — flexible, power laden, broad capacity, bed-type production tools.
- ★ **New Autometric Precision Boring Machines** — superb vertical models introducing a non-wearing twin-screw measuring system.
- ★ **New Automatic Transfer Machines** — Quill Feed unit, Way-Type Drilling unit, Lead Screw Tapping unit, Rotary Index Table, Feed Slide.
- ★ **New Compucon** — the precision indexing computer for rotary tables and dividing heads.
- ★ **New Tri-D Rotary Milling Head** — the amazing attachment which will produce almost any geometric shape in metal.



This scale model of
Kearney & Trecker
Machine Tool Show Exhibit
represents 6500 sq. ft. of
modern machine tools in action.



unfolds results of \$18,700,000 product development program

An extraordinary investment to bring you MORE PRODUCTIVITY and QUALITY . . . GREATER ECONOMY and PERFORMANCE in the new machine tools you buy from KEARNEY & TRECKER

Yes, the 1955 Kearney & Trecker Machine Tool Show story reflects a tremendous investment any way you look at it—\$3,500,000 in new buildings and facilities; \$8,900,000 in new tools and equipment; \$6,300,000 in research and new product development.

And at the Show you'll see the positive results of this unprecedented eight-year growth and development program. You'll see 31 unusual exhibits featuring among them not one, but four new lines of knee-type milling machines comprising 81 different models, styles and sizes; an entirely new line of medium size bed-type production milling machines with electro-hydraulic pendant control; a new group of vertical precision boring machines; new attachments for rotary

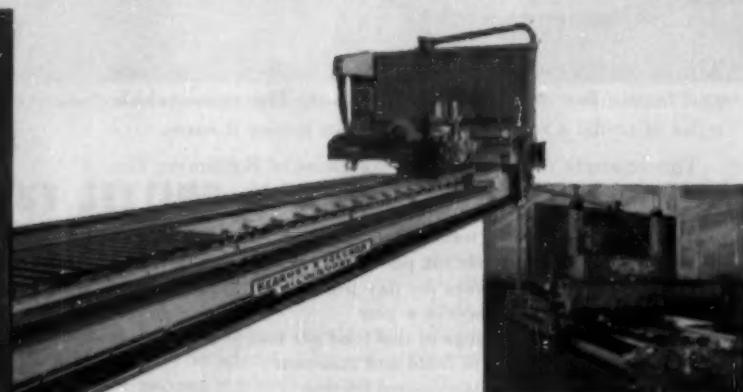
milling and precision index computing; automatic transfer type equipment — all of this and more to be seen and demonstrated in Booth 508.

Today, Kearney & Trecker offers you standard and special production machines that can meet any of your needs — with more productivity and quality, with greater economy and performance than ever before. What's more, you can obtain new machines either by outright purchase, conditional sales agreement or any of three Kearney & Trecker Tool-Lease plans.

See or write your nearest Kearney & Trecker representative. He'll be glad to discuss your production requirements and what these new Kearney & Trecker machines can do to meet them.



NEW GANTRY AUTOMATIC TRANSFER LINE — It mills, drills, turns, hones, spotwelds and more, operating 24 hours a day, producing over 1000 pieces per hour.



NEW GANTRY-TYPE WING SKIN TRACER-CONTROLLED MILLING MACHINE
— A 125-ton, 360° and rise and fall functioning giant of production, which is typical of recent Kearney & Trecker developments for the aircraft industry. Similar machines can be seen in operation at Kearney & Trecker's new Special Machinery Division plant in Milwaukee during the Show.

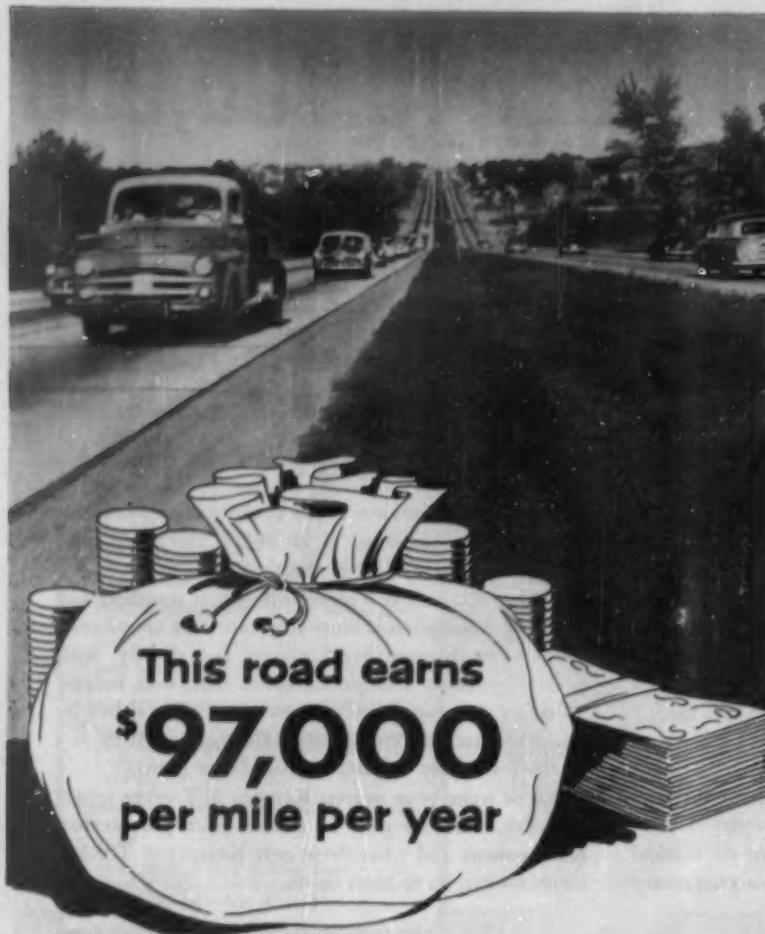


THE
MACHINE TOOL
SHOW
CHICAGO, ILL.
SEPT. 8-11, 1955
INTERNATIONAL EXPOSITION

BOOTH
508



BUILDERS OF PRECISION AND PRODUCTION MACHINE TOOLS SINCE 1898



A road earning money? Absolutely—in the form of gas taxes and license fees you pay to drive on it. The more vehicle miles of traffic a road handles the more money it earns.

This concrete road is U.S. 40, northeast of Baltimore. The section shown carries a daily average of 45,000 vehicles.

The number of vehicles traveling this road per day	45,000
Times the average vehicle tax per mile in Md.	\$0.00714
Equals this road's earnings per day per mile	\$321.30
Times the number of days in a year	365
Equals the annual earnings of this road per mile	\$117,275
Minus the annual cost to build and maintain such a road during its expected lifetime	\$20,000
Equals the annual net profit this road earns per mile	\$97,275

Concrete roads are the biggest money-makers because they attract the most traffic and have the longest life and lowest annual cost. Other pavements often fail to earn their building and maintenance cost. This drain on available funds leaves less and less for new highway construction.

To motorists, who pay for highways, this is an important reason why all main roads should be paved with concrete.

PORLTAND CEMENT ASSOCIATION, 33 W. Grand Ave., Chicago 10, Ill.
A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

READERS REPORT

The Big Shift

Dear Sir:

Your special report on the shifting of industry [BW—Aug. 13 '55, p78] just casually mentioned some of the major causes, which to a considerable extent are under "forced draft."

The fast write-offs, government-spurred to encourage plant dispersion—plus local tax subsidies and rent-free plants set up by municipal borrowing—inspired much of this new plant location in newer parts of the country.

However, no mention was made of the attempt of some manufacturers to exploit lower wage rates, and escape from union scales. Also, the fact that many of the newer plants, especially in chemicals and heavy industry, are so mechanized that relatively few workers are necessary.

In the southern states, where temperatures are high, expensive air cooling is necessary for optimum working conditions. Cooler, temperate climate is a necessary condition for high individual productivity.

J. M. RUSSAKOFF

NEW YORK, N. Y.

* All of the factors Reader Russakoff mentions were influential. However, surveys taken by management consultant groups have indicated that, in making decisions about locating new plants, company executives consider many other factors first before they study wage scales.

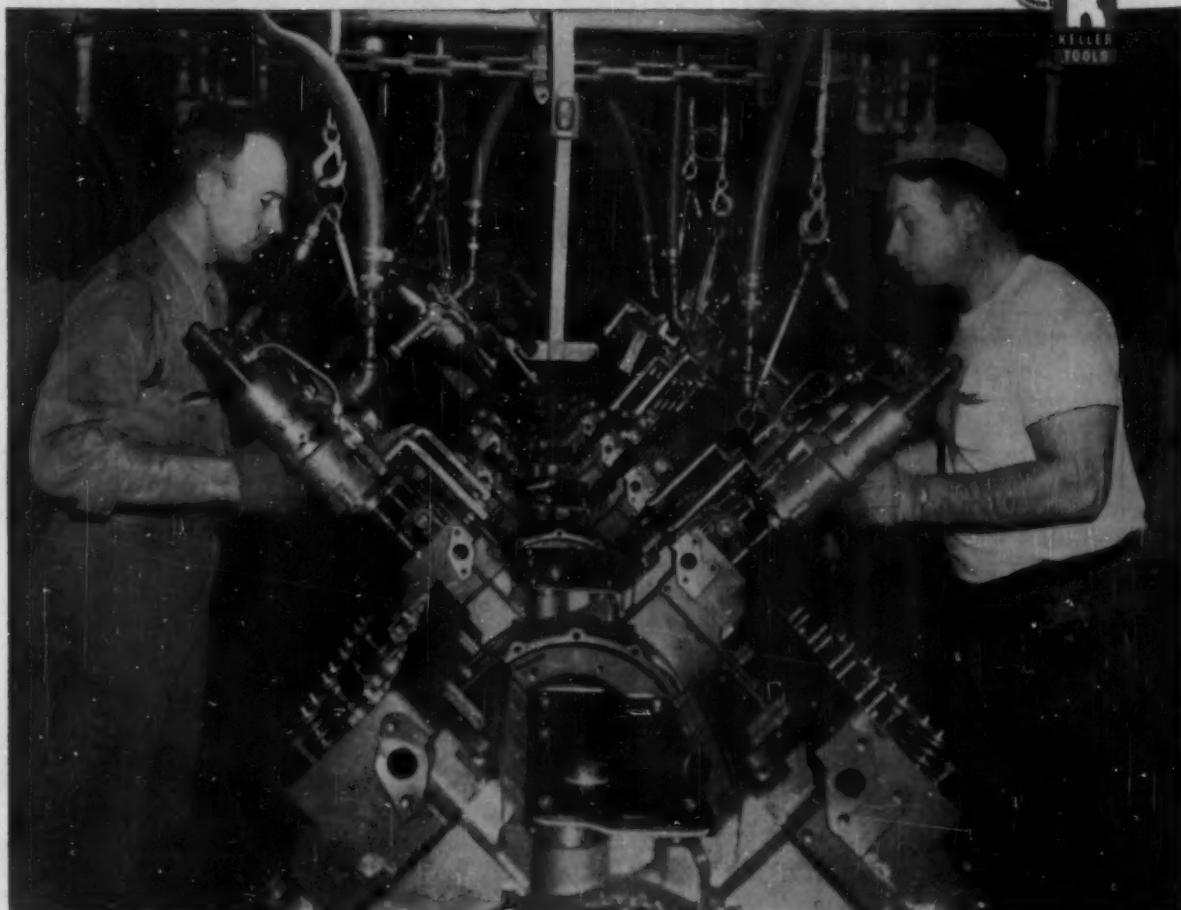
Dear Sir:

As President of the New Jersey Chapter of the Society of Industrial Realtors, I wish to take exception to the feature article Industry Moves—A Massive, Continuing Flow to the South and West [BW—Aug. 13 '55, p78].

Whereas the main premise of the article is quite true, I think some of the facts contained therein were . . . not presented adequately in cases where they happen to contradict or be an exception to the main trend. This is particularly true with regard to New Jersey.

In the first place in the graph on pages 78 and 79, the increase in plant and equipment in the Great Lakes industry was not drawn to scale and was not so great as shown on the graph, whereas the decrease in New Jersey was not nearly so great as shown on the graph because

Gardner-Denver MAKES AIR DO MORE AT LESS COST



Running down four cylinder head bolts simultaneously on each side of V-8 auto engine with Keller Multiple Nut Setters.

NEW APPROACH TO NUT SETTING MAKES ACCURACY AUTOMATIC

...another example of Keller Tool experience

In today's fast-stepping industrial production, speed is of the essence. But with speed must go unfailing accuracy. Hence, the setup you see above—where Keller Multiple Nut Setters are making a quick job more accurate than ever before.

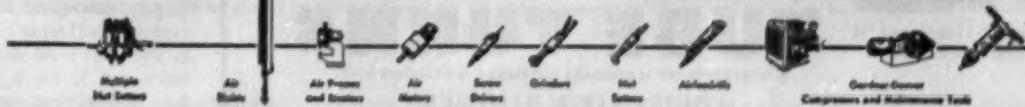
Formerly, that job was done with single spindle power tools, requiring

that the individual torque regulator on each spindle be adjusted by *estimating* the proper interval the tool was allowed to impact. Today, with Multiple Nut Setters, each spindle is *pre-adjusted* for the desired setting and stays that way.

In fitting Keller Air Tools to individual industrial needs, Keller

engineers cover every step. They study job blueprints to find the best tool arrangement. They design Keller Air Tool layouts showing the exact size and position of each tool. Then they make sure that the completed setup works at top efficiency. That's why they are so often welcome in plants where real production economies count. Keller Tool Division, Gardner-Denver Company, Grand Haven, Michigan.

KELLER TOOL DIVISION OF GARDNER-DENVER



Gardner-Denver
Compressors and Air Motors

TUBE-TURN

WELDED PIPING CUTS YOUR COSTS...



Welded piping in compressor room at Cleveland Clinic. Piping Contractors: Smith & Oby Co.

Measures up for modernization!

● Welded piping using TUBE-TURN® Welding Fittings and Flanges offers particular advantages in modernization and expansion. Here, at the famous Cleveland Clinic, a \$4,000,000 addition plus present buildings are being air conditioned for comfort.

Since welded piping requires minimum space, it's easily installed in existing facilities. Likewise, the uniformity and dimensional accuracy of TUBE-TURN Welding Fittings permit quick, sure fit-up, simplifying and speeding installation. And—the finished job provides leakproof permanence. To get *more for your money*, specify and buy TUBE-TURN Welding Fittings and Flanges. Your nearby Tube Turns' Distributor offers you prompt, full-line service.

The Leading Manufacturer of Welding Fittings and Flanges



"TUBE-TURN" and "W"
Reg. U. S. Pat. Off.

TUBE TURNS
A DIVISION OF NATIONAL CYLINDER GAS COMPANY
LOUISVILLE 1, KENTUCKY

again the graph was not to scale. However, the main thing is . . . the fact that New Jersey had jumped from fifth place to second place in new industrial construction in spite of the fact that it is one of the smallest states in the Union. This was completely ignored except for a small sentence in the middle of the copy. As a matter of fact, these graphs should have been published alongside of the other graphs, even though it might have contradicted the main theme, but for some reason they were not.

[Also] if the state of New Jersey's growth and construction were put on the basis of area or per capita, it would probably far outstrip any other state in the Union. Actually, new industrial construction is a better gauge of activity to come than present equipment or employment, because it means additional equipment and employment in the following years.

Furthermore, of course, the growth in the state of New Jersey has been to a large extent in distribution as well as manufacturing, and distribution does not take so many employees as manufacturing. Furthermore, New Jersey is not changing from an agricultural economy to an industrial economy as are Texas and California, and therefore, the growth is that much more significant. The main thing, however, is that New Jersey is certainly not declining. There is terrific growth all over the state, and whereas Ohio, Texas, and California may be outstripping it in that respect, it is certainly one of the healthiest spots in the nation. . . .

DAVID T. HOUSTON

PRESIDENT

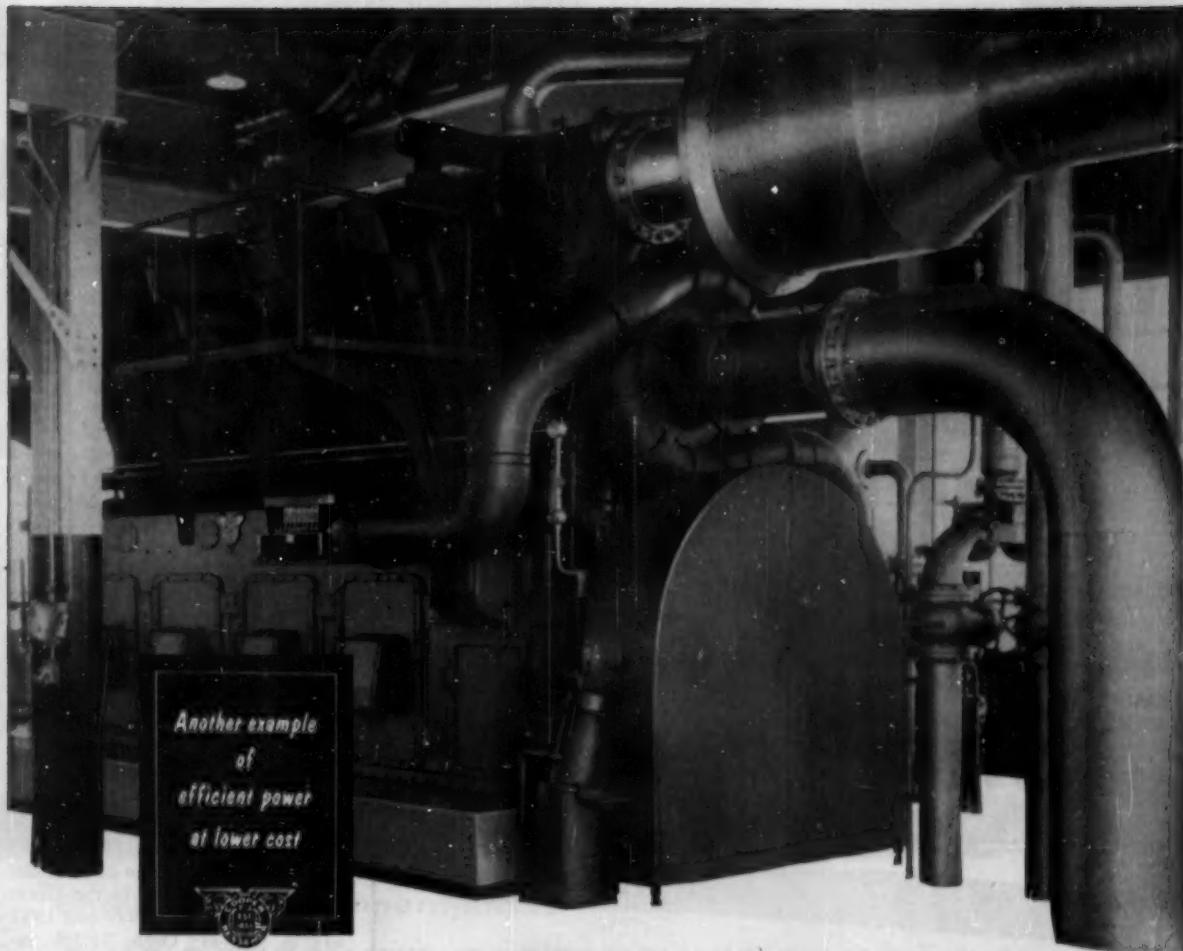
N. J. CHAPTER OF THE SOCIETY OF
INDUSTRIAL REALTORS
NEWARK, N. J.

• Space limitations did not allow us to spell out completely the various state trends. But we think we indicated clearly that the outlook for New Jersey is very good.

Dear Sir:

Re your special report [BW—
Aug. 13 '55, p78].

This otherwise comprehensive outline seems to have missed a significant comment: The Southwest's growth in plants, without corresponding employment, probably reflects the preponderance of the oil and chemical industries which are largely automatic. This may also explain California's opposite trend as the state's oil development matures and forms a lesser share in the diversifying industrialization,



HOW TO CONTROL THOUSANDS OF HORSES with only one switch

HOW simple, how automatic can you get in controlling thousands of big engine horsepower? That's an interesting and important question, to the men responsible for adequate, economical expansion of our nation's cross-country gas pipe lines. For these systems use scores of engines like the big Cooper-Bessemer shown above. And simplified control could easily save hundreds of thousands of dollars a year!

This particular engine is a new one, recently installed in Northern Natural Gas Company's modern mainline compressor station at Mullinville, Kansas. It is the first unit of its size that can be started and "put on line" by a *single*-switch control. Along with this extreme of simplified control it assures the fuel economy for which Cooper-Bessemer reciprocating gas engines are noted—un-

equalled by *any* other type of gas-fueled prime mover.

This is typical of the Cooper-Bessemer advancements worked out for *every* use of heavy-duty power . . . on land or sea. So to make the most of power, be sure to find out about the *new* things being done by one of America's *oldest* engine builders.

Mount Vernon, Ohio

COOPER-BESSEMER
Grove City, Pa.

New York • Chicago • Washington • San Francisco • Los Angeles •
San Diego • Houston • Dallas • Odessa • Pampa • Grogton •
Seattle • Tulsa • St. Louis • Gloucester • New Orleans • Shreveport
Cooper-Bessemer of Canada Ltd., Halifax, N. S., Edmonton, Alberta



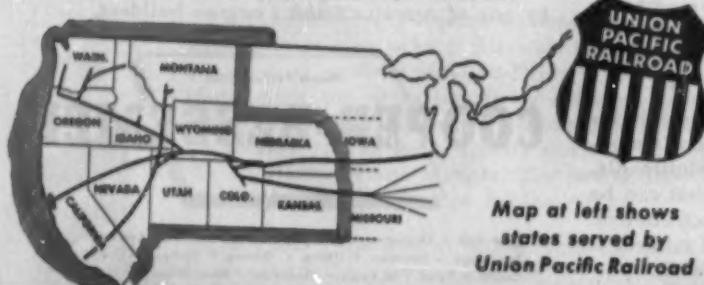
movement **ESSENTIAL TO INDUSTRY**

The nature of an industrial project determines its requirements but "*movement*" is always a big factor.

There's the *movement* of materials and equipment necessary for plant operation . . . the *movement* of unfinished products and of finished goods to markets . . . even the *movement* of executives on business and vacation trips.

So, in many ways, *movement* translated in terms of rail transportation, is very important when selecting an industrial site. That's one reason why so many concerns have established plants in the "Union Pacific West" where the finest of rail service is conveniently available.

For complete and confidential information about available sites, see your nearest U.P. representative or contact Mr. W. H. Hulsizer, General Manager of Properties, Dept. 373, Union Pacific Railroad, Omaha 2, Nebraska.



Map at left shows
states served by
Union Pacific Railroad

UNION PACIFIC RAILROAD

and the expanded aircraft industry, with more than the average number of workers per dollar of plant, must also tip the comparisons. Remember the guy who drowned in a stream that averaged an inch deep?

P. S. BARROWS

DEL MAR, CALIF.

Dear Sir:

Your special report calling attention to the movement of industry—particularly toward the Great Lakes and the Pacific Coast—was most interesting.

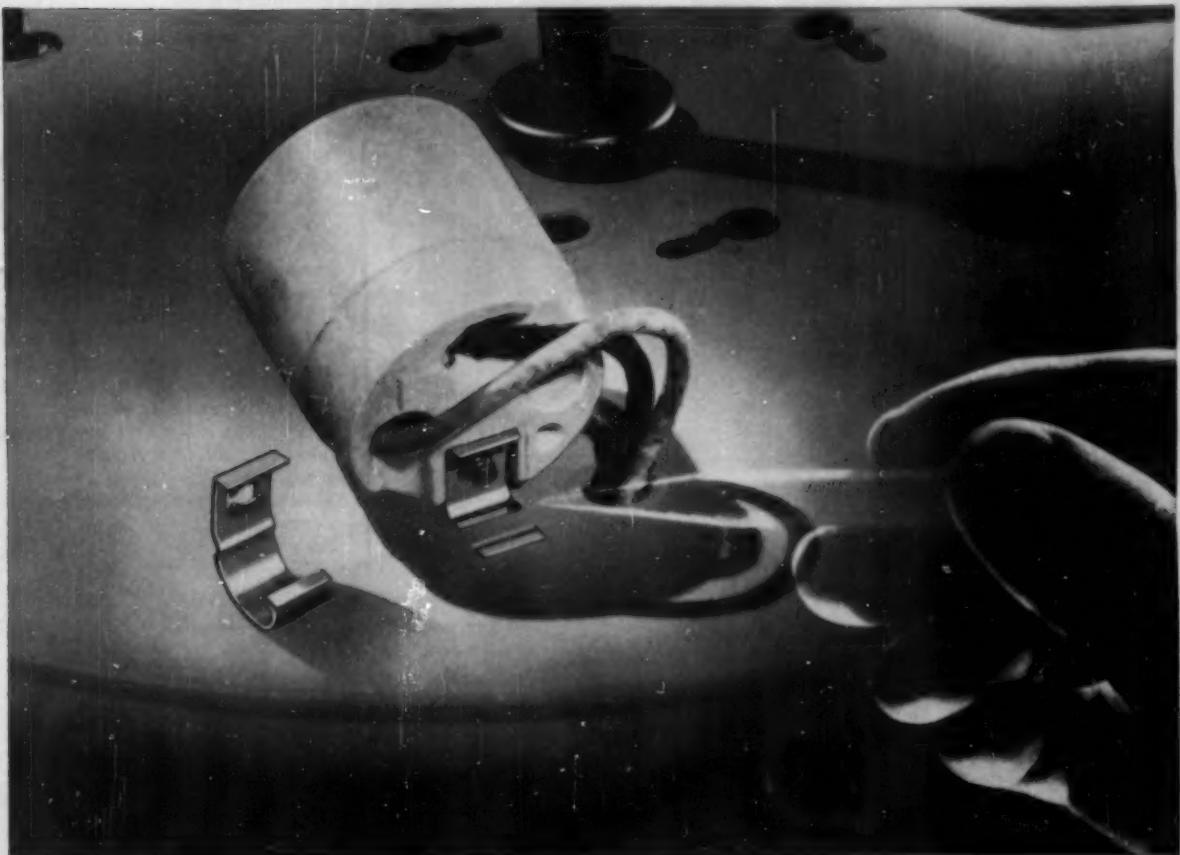
Within the Great Lakes area, however, comparisons of relative gains by state since 1947 are apt to be misleading unless due weight is given the impact upon each of the 1953 boom and the 1954 recession. The recession, as you know, hit manufacturing industries hardest. Ohio is and has long been the third ranking state in the manufacturing employment. From 1953 to 1954, average employment in Ohio factories dropped about 137,000. Two out of every three recipients of unemployment compensation in Ohio in 1954 came from manufacturing. Yet manufacturing accounts for only a little over one-half the workers protected by the Ohio law.

Though the 1954 data are more current, those for 1952 are probably more "normal." The relative gains in factory jobs in each of the large industrial states in the Great Lakes area between 1947 and 1952 are as follows: Ohio, 11.5% increase; Indiana, 9.1%; Michigan, 8.9%; Pennsylvania, 6.6%; Illinois, 5.8%.

Factory employment in Ohio jumped 11.5% between 1947 and 1952—exactly the same rate as that for the nation. Among the states above-listed, Ohio was alone in maintaining its proportion of the nation's factory workers—at one-twelfth of the U. S. total. The rest lost ground from 1947 to 1952.

These data, and probably those for subsequent "normal" years—perhaps 1956 or 1957—combined with your own findings, suggest that Ohio has been and is likely to be especially attractive among the Great Lakes industrial states, for industrial expansion. Most significant are your own observations that Ohio has been second only to Pennsylvania in capital expenditures for new plants and equipment, and that despite the 1954 recession Ohio was surpassed only by Texas and New Jersey in new industrial construction.

The St. Lawrence Seaway, you suggest, may enhance the future of the Great Lakes area. Any im-



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This is a typical example of SPEED NUTS engineered for special fastening applications. Tinnerman develops an average of 4 new SPEED NUTS every day for products of every description. And there are more than 8,000 existing variations to choose from.

A Tinnerman Fastening Analysis Survey can quickly tell you where SPEED NUT brand fasteners belong on your assembly line. Call in your Tinnerman representative soon for full information and write for our Fastening Analysis Service Bulletin No. 336.

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provement in such transportation facilities seems likely to be especially advantageous to Ohio. The nearly completed Ohio Turnpike—running across northern Ohio—and that proposed to cut diagonally southwest to northeast (linking Cincinnati, Columbus, and Cleveland, with a northwest spur toward Toledo and Detroit) will be of especial interest to new industries concerned with rapid transportation by truck.

Despite understandable differences as to which of the Great Lakes states may be most attractive to new industry, your special report is a real contribution.

WILLIAM PAPIER
DIRECTOR, DIV. OF RESEARCH &
STATISTICS
BUREAU OF UNEMPLOYMENT COM-
PENSATION
COLUMBUS, OHIO

Silver Saves

Dear Sir:

Re your editorial Silver: A Sleeping Dog [BW—Jul. 30 '55, p136].

I disagree with the supporters of repeal having all the arguments, for it is true that to a certain extent it may be a naked handout, as Prof. Lester Chandler of Princeton states, but it is not so bad as the \$6-billion a year handout to the farmer for price support, and billions more for other support programs.

At least the purchase of silver by the Treasury does give employment to the people who labor in these mines, and capital must be extended and invested to operate these mines.

Also, it is no miracle as you state that has been accomplished without costing the taxpayer a cent whereby the Treasury reimburses itself for the cost of the silver by issuing Silver Certificates. . . .

Let me remind the professor that with an interest . . . of over \$17-billion a year on the national debt, the Sleeping Dog adds more soundness to our monetary system than borrowing money and paying interest that automatically increases taxes which in turn reduces the American taxpayer's purchasing power. . . .

The 14 senators who favor silver in the U. S. Senate should be given . . . a Special Silver Medal for keeping a watchful guard over the Sleeping Dog. . . . After all, with the national debt rising, and interest rates increasing—how big can you blow a balloon?

MAX SCHUBB
MUSKEGOON, MICH.



Manpower's amazing and here is the proof:
When shipping costs grew, the boss raised the roof . . .



Now the roof's back in place and the future looks bright,
Swift RAILWAY EXPRESS keeps his shipping costs light.

The big difference is

Whether you're sending or receiving, whether your
shipment is big or small, and whether it's
moving by rail or air—you'll find it pays to specify
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in speed, economy, and safe, sure delivery.

• • •

Railway Express uses the facilities of some 480 in-
dependent and competitive transportation compa-
nies in the movement of express traffic. It's free
enterprise at its best, putting at your service one-
third of a million miles of co-ordinated rail, air, water,
and truck routes that connect all America.



...safe, swift, sure

We've been saying
"Eye Accidents Cost More than
\$5.00 Per Worker"



Here's One that Cost \$2400!

Claimant testified that while at work something blew into his eyes; that a fellow worker wiped the eye with a dirty shirttail; that he suffered considerable pain for several months; that several doctors could do nothing to alleviate his suffering. All of the physicians testified and all varied as to the cause of the injury. One theory was that the claimant was a malingerer; another that the claimant had inflicted the injuries himself; another that acid had come into accidental contact with the eye.

After hearing all the testimony, the court decided that the claimant had become blind in one eye as the result of an accidental industrial injury and

*In compensation alone

awarded \$24.00 per week compensation for 100 weeks.

98% of industrial eye accidents can be prevented with an adequate Eye Protection Program. It saves eyes. It saves time. It saves litigation. It saves money — in compensation, insurance, idle machines, first aid and in the quality of production turned out. Ask an AO† Safety Representative for details. Or write American Optical Company, 519 Vision Park, Southbridge, Mass., for booklet.

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BUSINESS OUTLOOK

BUSINESS WEEK
SEPT. 3, 1955



Brakes on rising output (any one of which might seem slight by itself) gradually are becoming more perceptible:

- Rising costs on borrowed money;
- Higher prices on raw materials and fuels;
- Growing wage bills as the rise in hourly rates fans out;
- Increasing scarcity of factory hands among the unemployed.

Higher price tags on money, materials, and an hour's labor add directly to the cost of goods produced. Expansion of output to spread unit costs isn't necessarily the answer; that means expense for training workers, because the unskilled predominate among the jobless.

Rising costs can sometimes be passed along, even these days. But competition for the consumer's dollar rules this out in most cases.

The consumer, in fact, sees more bargains than markups so far.

The resulting squeeze on factory profits isn't tight, generally speaking, but margins in many lines are sure to reflect it.

—•—
Prices of metals show just how hard it is to get enough to sustain production (much less to build a comfortable inventory).

Copper, of course, is the conspicuous example. Strikes, here and abroad, have cramped supplies in the face of unprecedented world demand. This week, for example, exports from Chile were impeded once more by the walkout of government workers.

Even handicaps imposed on Connecticut Valley brass mills by floods (page 28) failed to reduce the clamor at the doors of copper producers.

Selling prices for copper this week might just as easily have been 50¢ a lb. as the 43¢ posted by leading suppliers. All the metal offered in New York at 50¢ was snapped up. Futures contracts calling for nearby delivery climbed to 49½¢.

The bouncy London Metal Exchange, meanwhile, also saw spot copper go at 50¢, New York equivalent, during Tuesday's trading.

Copper's long-range prospects are bolstered by the fact that producers before long will owe Uncle Sam's stockpile as much as 40,000 tons. Delivery once again has been officially deferred on more than 25,000 tons previously "released" by the stockpilers.

Inventory scrambles always have a way of making it appear that supplies of major metals never will be adequate again.

Take steel and aluminum. Not long ago, buyers were supposed to be stocking up against possible strikes and inevitable price rises. If they succeeded, you'd never guess it; demand hasn't slackened the least bit since new wage contracts were signed and prices advanced.

—•—
Metals are largely responsible for a 7% advance in the Bureau of

BUSINESS OUTLOOK (Continued)

BUSINESS WEEK
SEPT. 3, 1955

Labor Statistics' sensitive index of industrial raw materials since the first of June (running the rise to 20% since the post-Korea low).

The gain for spot prices would have been even more but for the headlong decline in wool (down 25¢ a lb. in four months) and moderate weakness in cotton (off about ½¢ a lb. since June).

Prices of industrial products at wholesale (a more advanced stage of fabrication than basic raw materials, hence reflecting labor costs in greater degree) have regained most of the post-Korea loss, and are poised for a break-through into new high ground.

—•—
You, as a manufacturer, haven't yet seen the full effect of wages on the cost of things you buy.

Suppose your suppliers have passed along the markups on steel. They may not have caught the rise in aluminum yet—and certainly they are lucky if they themselves know what copper is costing them.

Now coal prices have been advanced to reflect the new union contracts. Mechanical rubber goods, too, have taken a belated rise.

This is by no means a complete listing, but it gives an idea.

—•—
Big fuel users might well take a look at comparative costs.

Oil men, before coal prices went up, felt the distillate they sell to industry was a little overpriced as against coal and natural gas. That figuring would seem to give gas the inside track now.

—•—
You'd expect enough workers to be available, considering national unemployment of about 3.7%, for a little factory recruitment.

However, a lot of those people are casual workers—students in the market for a short time, people who want outdoor work, and the like.

Only about 2.8% of those who are eligible for unemployment compensation are without jobs. And it's mainly from this much more limited pool that manufacturers needing workers would have to draw.

Besides, in highly industrial states like Ohio and Indiana, those receiving compensation are less than 2% of those qualified. (Michigan, with growing model-change layoffs, is an exception right now.)

—•—
New stiffening was evident in money rates this week (page 32) as (1) more regional Federal Reserve banks nudged up their rediscount rates, (2) commercial paper was marked up for the eighth time this year, and (3) bankers' acceptances again were advanced.

Besides, banks extending loans to business customers now often expect borrowers to maintain fatter deposit balances.

—•—
Capacity increases in the cement industry should, sooner or later, catch up with skyrocketing demand.

Everybody's doing it, but Lone Star Cement took a leading place this week with its third major announcement of the year—\$35-million for a 2-million-bbl. plant at Lake Charles, La.

Earlier programs were for Hudson, N. Y., and Houston, Tex.

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for the shots
you can't take again...



MALLORY Photoflash Cartridges

prevent "Lazy" Flashes—Spoiled Pictures!

IT takes split-second synchronization of shutter and flash to capture on film the priceless moments you want to record... a wedding, a birthday party, a child's awe before the Christmas tree.

All too often, pictures that can't be taken again turn out fuzzy or dark because of a delayed flash. Blame it on the battery! As ordinary batteries age, they react more slowly. The flash goes off a fraction of a second too late to make the perfect picture.

Now you can be sure—with a B-C photoflash cartridge combining dependable Mallory Mercury Batteries and Mallory Capacitors. You won't lose your picture... won't waste bulbs and film. The unique Mallory flash cartridge has a practically constant power output throughout its exceptionally long life. Thousands of sure-fire flashes are yours—perfect timing for two full years of normal service.

Mallory mercury batteries and capacitors have proved their worth in many kinds of electronic equipment and precision instruments. In the fields of electronics, electrochemistry and specialized metallurgy, Mallory has long been a leader in research, development, and the production of quality, precision products.

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automation in mind?



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Read the Whiting just-published 12-page booklet "Planning the Crane for Its Use in Automation!" It gives important information regarding the various types of overhead cranes... top running, underhung, monorail and gantry. It will help you determine the best system to handle your materials or products... quickly, smoothly, and at lower cost. Written by a specialist with many years of practical experience in solving handling problems, it will be of interest and value to you. Write today for your copy of Bulletin M-30.

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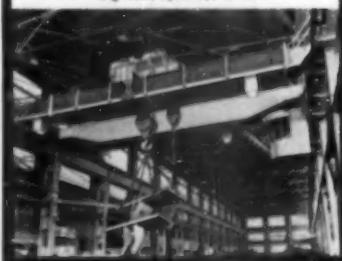
Manufacturer of Overhead Cranes; Trambeam
Handling Systems; Trackmobile; Foundry,
Transportation and Chemical Processing Equipment.



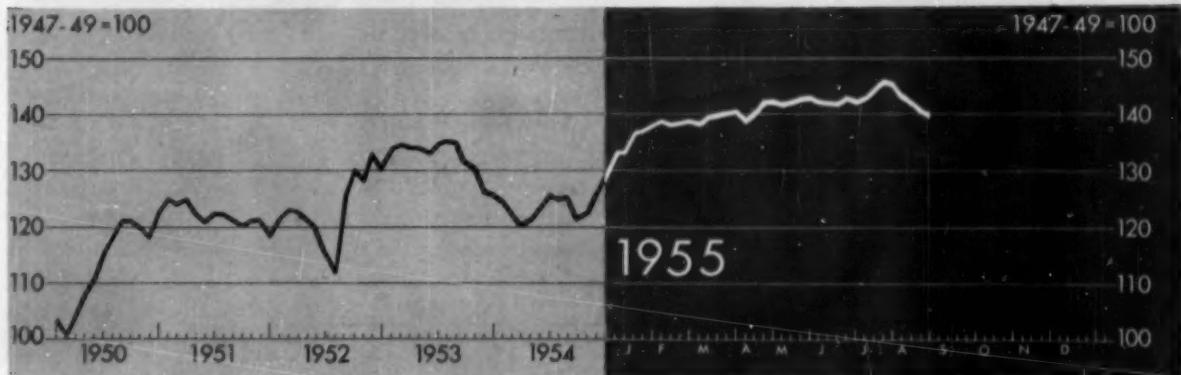
Whiting Trambeam is the most flexible
overhead handling system.



Whiting Engineered Cranes handle
big loads up to 500 tons.



FIGURES OF THE WEEK



Business Week Index (above) *140.2 †141.0 145.8 122.6 91.6

PRODUCTION

	Latest Week	Preceding Week	Month Ago	Year Ago	1946 Average
Steel ingot production (thousands of tons)	2,264	2,186	2,098	1,525	1,281
Production of automobiles and trucks	152,729	165,094	199,788	113,496	62,880
Engineering const. awards (Eng. News-Rec. 4-week daily av. in thousands)	\$52,178	\$51,653	\$67,625	\$53,292	\$17,083
Electric power output (millions of kilowatt-hours)	10,906	10,812	10,727	9,227	4,238
Crude oil and condensate production (daily av., thousands of bbls.)	6,685	6,701	6,616	6,141	4,751
Bituminous coal production (daily average, thousands of tons)	1,579	1,553	1,582	1,275	1,745
Paperboard production (tons)	283,215	282,969	280,062	241,922	167,269

TRADE

	73	73	73	67	82
Carloadings: manufactures, misc., and l.c.l. (daily av., thousands of cars)	57	56	59	46	53
Carloadings: raw materials (daily av., thousands of cars)	+6%	+3%	+12%	none	+30%
Department store sales (change from same week of preceding year)	180	216	201	184	22

PRICES

	404.6	404.1	403.1	410.7	311.9
Industrial raw materials, daily index (U. S. Dept. of Labor BLS, 1947-49 = 100)	97.1	96.8	97.0	86.6	††73.2
Foodstuffs, daily index (U. S. Dept. of Labor BLS, 1947-49 = 100)	78.9	78.8	81.1	98.5	††75.4
Print cloth (spot and nearby, yd.)	19.0¢	19.0¢	19.0¢	18.9¢	17.5¢
Finished steel, index (U. S. Dept. of Labor BLS, 1947-49 = 100)	153.9	153.9	153.9	144.5	††76.4
Scrap steel composite (Iron Age, ton)	\$43.83	\$43.83	\$43.33	\$28.67	\$20.27
Copper (electrolytic, Connecticut Valley, E&MJ, lb.)	42.125¢	40.875¢	36.000¢	30.000¢	14.045¢
Wheat (No. 2, hard and dark hard winter, Kansas City, bu.)	\$2.09	\$2.13	\$2.17	\$2.44	\$1.97
Cotton, daily price (middling, 14 designated markets, lb.)	33.52¢	33.64¢	33.72¢	34.05¢	††30.56¢
Wool tops (Boston, lb.)	\$1.79	\$1.76	\$1.80	\$2.25	\$1.51

FINANCE

	341.2	335.1	343.2	240.5	135.7
90 stocks, price index (Standard & Poor's)	3.58%	3.57%	3.54%	3.47%	3.05%
Medium grade corporate bond yield (Baa issues, Moody's)	21%	21-21%	21-21%	11-11%	1-1%

BANKING (Millions of dollars)

Demand deposits adjusted, reporting member banks	55,669	55,360	56,416	54,215	††45,820
Total loans and investments, reporting member banks	84,098	84,210	84,914	82,368	††71,916
Commercial and agricultural loans, reporting member banks	24,050	23,940	23,526	20,773	††9,299
U. S. govt guaranteed obligations held, reporting member banks	30,972	31,261	32,161	36,107	††49,879
Total federal reserve credit outstanding	25,425	25,495	25,506	24,690	23,883

* Preliminary, week ended August 27, 1955.

† Revised.

‡ Estimate.
** Ten designated markets.

§ Date for "Latest Week" on each series on request.

in BUSINESS this WEEK . . .

GENERAL BUSINESS:

LABOR GAINS HINT AT NEW DEMANDS. Unions will use this year's settlements as a starting point for 1956 bargaining. p. 25

GM SHIFTS GEARS ON RED TRADE. Auto company lifts self-imposed ban on sale of cars to Communists and is ready to take their orders. p. 27

HOPE COMES FROM THE CLEANUP. After the flood, brass and copper industry digs out, finds the damage a less-than-knockout blow. p. 28

STEPS TO SHACKLE . . . hurricanes—studies and moves for faster warnings and improved flood control—get started. But there are hurdles. p. 29

SHAKEUP AT SAFEWAY lets Lingan Warren out as president after 21 years. The chain's troubles have been growing. p. 30

WESTINGHOUSE OFF FAIR TRADE. Company admits it can't control prices at retail. p. 31

SALK VACCINE . . . USPHS report clears Cutter of negligence, raises spectre of a near-disaster last spring. p. 32

BANK LOANS WILL COST MORE. Higher discount rates will tighten up on speculative borrowing. p. 32

BUSINESS ABROAD:

SIGHTING ON ATOM GOLDEN AGE . . . are five nations, each involved in harnessing the atom. p. 114

GERMAN TRUSTS BLOOM. The pre-war system is showing up in steel, chemicals, and banking. p. 120

BUY AMERICAN: UNDER FIRE AGAIN. Defense Dept. award passes over a foreign low bidder. p. 121

IN BUSINESS ABROAD. News about Morocco's devastated economy, Mannesmann's negotiations on bond issue, Brazil's exchange rate. p. 122

COMPANIES:

TEXAS COMPANY WRAPS UP BIG CONSTRUCTION PACKAGE . . . everything that's needed to build a pipeline in Turkey. p. 136

FINANCE:

WHY THE RAILS ACT AS THEY DO. Market action follows the outlook for months ahead, not the record of today. p. 80

THE BIG GET BIGGER. In the latest list of money-earners, GM still leads the rest. p. 86

GOVERNMENT:

IN WASHINGTON. News about surplus potatoes, strategic stockpile, new weapons. p. 126

INDUSTRIES:

JET TRANSPORTS — TWO-WAY HEADACHE. Choice of jet planes for commercial use is causing anxiety among airlines—and two manufacturers. p. 98

GAS: ON CALL NEAR THE MARKET. That's the idea behind growth of projects to store natural gas in old, Allegheny oil fields. p. 102

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LABOR:

UNIONS HINT AT DEMANDS TO COME. What's in the bargaining cards for 1956. p. 89

NLRB RULINGS . . . continue to hinge on extent of board jurisdiction. p. 90

OPENING THE BOOKS. New guides on labor's right to see management's financial data may soon come from the Supreme Court. p. 92

IN LABOR. News about no-raiding preview for labor unity, NLRB and union buttons, UAW's wariness at Burroughs. p. 94

MANAGEMENT:

IN MANAGEMENT. News about the fight for control of Minneapolis-Moline, corporate gifts, teaching educators about industry. p. 142

The Pictures—Boeing Airplane Co.—98; Cal Pictures—30 (lt.); Joe Clark—89 (lt.); Grant Compton—102, 103, 106; Walter Curtin—64, 65; Robert B. Ficks—28, 29; I.N.P.—46, 89 (rt.); Herb Kratovil—Cover; Archie Lieberman—41, 42; Rehman Photo Service—52 (bot.); Safeway—30 (rt.); Styrofoam—44, 45; Gordon Tenney—130, 137; U.P.—26, 52 (top).

MARKETING:

IN MARKETING. News about separate dealerships for Plymouth, sale of motor oil in supermarkets, variety chain store earnings. p. 54

FAST GRAB AT A BIG MARKET. Owens-Corning's Fiberglas screens claim 20% of premium market in a short two years. p. 56

THE MARKETS:

PACING THE LATEST RALLY—the metal shares. p. 124

NEW SEC RULES tighten up on proxy fights, loosen a bit on advertising new securities issues. p. 124

WALL ST. TALKS. p. 125

PRODUCTION:

THINKING TOOLS PUT ON A SHOW. Visitors at Chicago show see how far machine tool manufacturers have gone with automation. p. 41

PLASTICS: A BITE AT HOME BUILDING. As Houston's plastic home nears completion, industry looks for role for its products in construction. p. 44

NEW PRODUCTS. p. 52

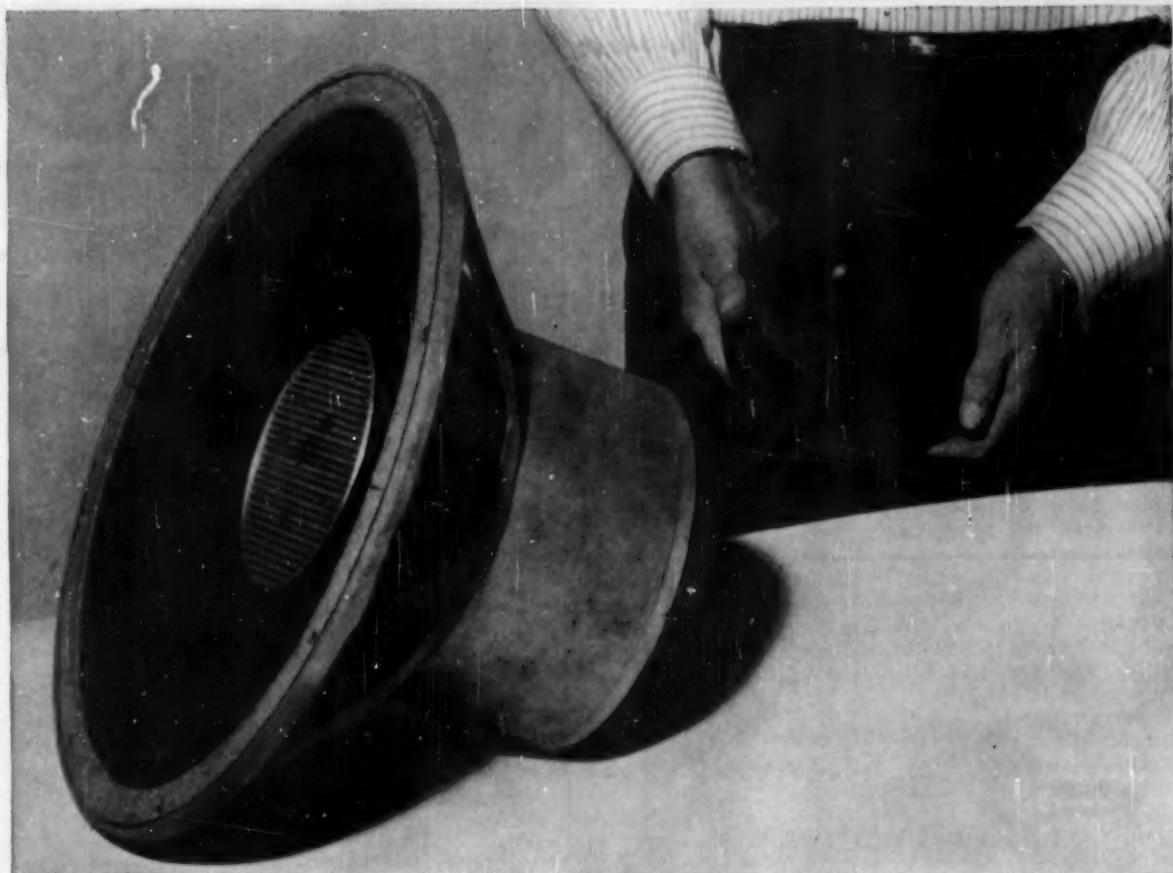
REGIONS:

IN REGIONS. News about oil company's "tax dodge" in Texas, legalized poker, slum clearance plans, Alaska salmon fishing. p. 72

"BUMS" IN FIELD . . . for a new ball park. The Brooklyn Dodgers' Ebbets Field is a money-loser. p. 78

RESEARCH:

AIRBORNE DETECTORS HUNT ORES IN CANADA. More and more primary geological exploration can now be done from the air. p. 64



Last link in the chain of high fidelity sound reproduction is the loudspeaker. For quality speaker performance, a magnetic field of high strength and uniformity is

obtained with an Alnico magnet. The one displayed here weighs 10½ pounds, actuates both high frequency and low frequency diaphragms of the 15-inch speaker on the table.

Alnico magnet keeps sound in line from deepest "woof" to highest "tweet"

Most radio and sound equipment has a common shortcoming. It falls short of high fidelity reproduction.

Deep bass tones don't get through the loudspeaker. And neither do the high-pitched notes. The trained ear senses the lack of them at once.

Sometimes the fault lies in the loudspeaker itself. Perfect performance all along the line including the amplifier counts for nothing if the speaker cannot efficiently change the electrical energy it receives back into the full range of sound.

And it is well nigh impossible to efficiently cover the whole range with a single speaker.

So high fidelity loudspeakers separate their high and low frequency operations. A large cone, or "woofer" handles the job of giving out the low notes. A smaller diaphragm, or "tweeter", takes care of the high ones.

For quality speaker performance, a permanent magnetic field of high strength and permanence is needed. And Alnico — a magnetic alloy of aluminum, nickel, cobalt and iron — provides it. Nickel, in combination with the other metals, imparts desirable magnetic characteristics to the alloy that can be obtained with

no other metal. *The use of nickel in the Alnico magnet is another example of the important part nickel plays in solving product problems.*

Do you have a problem involving metals? One in which corrosion, high temperatures, stress or fatigue are causing trouble? Talk it over with us. Two minds being always better than one, we may be able to help you find out how nickel or a nickel alloy can solve your difficulty.

Write for "List A" of available publications. It includes a simple form that makes it easy for you to outline your problem for our study.

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LONG DISTANCE RATES ARE LOW

Here are some examples:

New York to Philadelphia	50¢
Baltimore to Pittsburgh	80¢
St. Louis to Cincinnati	\$1.00
Atlanta to Chicago	\$1.35
Los Angeles to Detroit	\$2.35

These are the daytime Station-to-Station rates for the first three minutes. They do not include the 10% federal excise tax.

CALL BY NUMBER. IT'S TWICE AS FAST.

BELL TELEPHONE SYSTEM



Labor Gains Hint at New Demands

- Settlements this year were surprisingly peaceful, and unions chalked up some impressive gains.
- Wage-fringe benefits clustered near record levels.
- GAW—a new bargaining issue—got a toehold.
- Labor will use this year's gains to shape the pattern for next year's bargaining.

Not much can happen in the next six months that will alter an employer's forecast of his near-term wage costs. Most of the big and influential wage bargains have been made.

Once again, these precedent-making settlements fail to fit neatly into a pattern. But their range enables the individual employer to calculate pretty closely just where his own pay rates must stand if he's to maintain his standard relationship with his industry or area.

This year's contract making is far from done, and no one should be too surprised if further novelties are produced. Nor can the books be closed on the year's strike figures. Negotiations now in progress or still to be initiated may hit snags serious enough to cause substantial strike idleness. But the issues that remain will affect 1956 bargaining (page 89), not this year's.

• **Pattern**—Thus, you can now size up what this year brought on the labor front:

- Although there was a wide range in wage-fringe bargains, they tended to cluster near record levels.

- A new bargaining issue—supplementary unemployment pay or guaranteed annual wages—was opened up.

- Although large contracts were renegotiated and large issues met, settlements were made more peacefully than most observers had expected.

I. How Much?

It isn't simple any more to figure what a new contract will cost an employer or what it will yield to his employees in terms of dollars and cents. That used to be obvious in the days when a wage increase of 5¢, 10¢, or 15¢ an hour was the biggest part of the story. Now, with emphasis on fringe

bargaining, many an employer himself doesn't know just how much of a financial commitment he has taken on.

For example, it took the basic steel companies more than two years to figure out what the pension deal they made in 1949 cost them. Today's bargaining encompasses a whole universe of fringes for which there is no reliable cost experience.

As a result, the union and the company will put different prices on the bargain, with neither really sure of its own figures.

- **Wage and Fringe**—Simply in wage bargaining, key 1955 settlements ranged from the zero wage advance for the textile workers union in the Berkshire, Hathaway, and Bates mills to the \$2-a-day gain (\$1.20 now, another 80¢ next April) that John L. Lewis' mine workers got from the bituminous coal industry.

These simple wage bargains were almost the exceptions. Much more common were involved deals covering a host of welfare costs as both unions and companies concentrated on fringe issues.

Ford and General Motors settled for a complicated package worth about 20¢ an hour. It included annual improvement factors, a wage inequity fund, insurance and pension improvements, and supplementary unemployment pay. The basic steel companies conceded an 11½¢ basic hourly wage boost, 3½¢ an hour to increase the rate spread, and pension liberalization.

Following the auto settlements, it looked at first as though their SUP pattern would not be significantly modified this year. This notion was short-lived as the steel union signed American Can and Continental Can to contracts calling for 10¢ across-the-board hourly increases, 3¢ job spread boosts,

plus an SUP program that would cover employees for 52 weeks in contrast to the 26-week coverage in autos.

II. From GAW to SUP

The mutation of labor's guaranteed annual wage demand into supplementary unemployment pay settlements cannot be considered a closed issue. Taking advantage of the competitive situation in the auto industry with skill and audacity, Walter Reuther scored first by getting Ford Motor Co. to accept the principle of employer obligation for unemployment, then by getting General Motors to follow suit.

By no stretch of the facts can this be fairly represented as the attainment of GAW. But Reuther and his union take the view that they have established a principle that may be extended to cover GAW.

It seems probable, therefore, that the unions will look upon SUP as a halfway house to GAW objective; that future bargaining will be calculated to carry them further toward the goal of guaranteeing a full wage for a full year. Instead of negotiating in 1956 from the 26-week coverage for SUP in autos, the unions will start talking about the 52-week level established in the can companies.

III. A Quiet Year

Predictions for a stormy 1955 were based on three things:

- This was the year that the bellwether auto industry ended five-year contracts, and a lot of problems had accumulated since 1950.

- This was the year that the GAW issue was to be met.

- This was the year that unions had to make up for their comparatively modest gains in 1954.

- **Deciding Factor**—One development above all else made hash of the dire forecasts: business prosperity in 1955. To be sure, it took ingenuity and hard work to find the SUP compromise on GAW, and steel did have a brief, senseless strike. But booming business proved to be a miraculous solvent. It even created the sharp competition within the auto industry that Reuther effectively exploited.



Plant Explosion Rips Oil Company's New Unit

While causes of the Whiting (Ind.) blast won't be known for weeks—or even months—it is known that the fire began with an explosion in Standard Oil's new fluid hydroformer unit, a 26-story structure completed last March. The hydroformer was run for 60 days, then adjusted, and the blowup occurred as it was being started up for its second run.

The fires destroyed 60 storage tanks and almost 10% of the refining area proper, covering 15 acres. Chmn. Robert E. Wilson puts plant damage "in excess of \$10-million"—all but \$1-million of which is covered by insurance spread among 30 companies.

Damage to homes, stores, and highways is only partially covered by insurance, and will run to millions (the Red

Cross's over-all figure was \$100-million). Standard set up an office to handle claims for property damages and personal injuries.

Standard's Whiting plant represents 54% of its refining capacity. While the damaged unit is being restored, Standard's competitors are supplying the quantities of product necessary to serve its customers.

GM Shifts Gears on Red Trade

● Auto company reverses its policy and authorizes sale of cars to Russia and European satellites.

● GM will accept orders—even look for them—and let Washington decide whether they should be filled.

● Washington says it will continue to consider export license applications on merits of each case.

The world's largest manufacturing corporation has adopted a new policy to fit the changing relationships between East and West. A few days ago, **BUSINESS WEEK** learned, yellow policy memoranda arrived on the desks of General Motors Corp. executives around the world. They bore this message:

You are authorized to sell non-strategic goods—specifically, automobiles—to Soviet Russia and its European satellites.

● **Reversal**—Thus a two-year-old GM policy was reversed. In 1953, GM decided it would accept no orders or inquiries from behind the Iron Curtain. It was a voluntary decision on the part of GM management. Indeed, it went beyond official U.S. government policy, which at no time has specifically banned sales of passenger cars to East Europe and Russia.

Now, as far as General Motors is concerned, the bars are down. Decisions on auto sales are wholly in the hands of the government.

In one sense, GM's policy is a result of the East-West thaw. It represents, dramatically, how the "spirit of Geneva" has reached down into the board room. At Ford Motor Co., which has followed a similar no-sale policy, changes are cooking—though no explicit shift is yet at hand. Other auto makers, other industries, are looking carefully at their own policies in the area of East-West trade. All are looking to Washington for guidance.

● **Shifting Responsibility**—Just as important, perhaps, is the fact that GM's new policy is an effort to shift sole responsibility for determining what gets shipped to the Reds to the government, where businessmen have felt it belonged from the start. Many have been confused by what they term on-again, off-again talk of East-West trade. Some feel they actually have been hurt.

No one—least of all GM—expects a sudden bloom of auto business with Czechs, Poles, Russians. The prospects are piddling, at best. Yet there is no question that large companies, like GM and Ford, have inquiries, in increasing number, coming in over the

East European transom. Nor is there any question that salesmen overseas are now going to look for business where before, on company orders, they closed their eyes to it.

● **Competitive Angle**—There is, after all, a competitive angle—not only for autos, but for the items now on the list of restricted exports. GM must feel that, at some future time, it might be able to sell trucks, power equipment, earthmoving tools to Communist countries. The time may never come. But why not be ready?

GM's experience with export controls put the origins of present policy in perspective.

Export controls of one kind or another have been in effect since 1948. In 1951, the Battle Act put teeth in existing controls by limiting U.S. aid to those nations that imposed the same strategic-goods restrictions that the U.S. did. Passenger cars have not been on the list. Control officials insist that exporters have been legally free to get licenses to ship cars anywhere in the world, Communist China excepted. But, trucks and parts, many auto components, have been proscribed.

These ground rules, apparently, haven't been firm. Washington has said that each case would be decided on its merits. Such things as end-use, the chance of transhipment, financing and economics, "national interest" would have to be considered. What happened was that no autos made a legal trip into Communist territory. The first export license granted was the ill-fated Chevrolets-for-Bulgaria contract (BW-Aug. 27 '55, p122).

● **GM's Difficulties**—GM's troubles began long before the Bulgars wanted Chevies. Like all exporters, it was inundated with paper work. GM had to keep tabs on hundreds of thousands of dollars worth of individual exports daily. The company might be held to account if a shipment was illegally rerouted and found its way to the Communists. A recent example is the disappearance of Willys-Overland Export Co. Jeeps into Rumania. Willys didn't mean to outfit the Rumanians, but the government held that Willys had in-

formation that the legitimate buyer of the Jeeps might indulge in some monkey business—and should have told the government about it.

In 1951, the Poles approached the GM subsidiary in Denmark with a deal. They wanted \$250,000 worth of auto and truck parts, and would pay in coal. Denmark was strapped for coal that winter, and the proposition was bucked to the highest echelons in the U.S. and Danish governments. It was decided in Washington—reportedly in the White House—that the national interest would be served if Denmark, a NATO ally, got the coal and Poland the parts.

● **Company Takes Rap**—Later, Sen. James Kem (R-Mo.) got wind of the transaction, and loosed a blast against the Truman Administration—and GM—for trafficking with the Communists. To its horror, public relations-conscious GM received a raft of letters from customers, stockholders, mothers—condemning the company for selling parts to Poland while American boys were being killed in Korea.

GM answered the letters with an explanation of the government's decision. Yet Washington stood aloof, made no official explanation of the deal, and let the company take the rap. Meanwhile, the deal fell through.

GM then took this policy stand: no solicitation of business from behind the Iron Curtain, the strictest and most detailed verification of the destination of all export orders. GM made clear that it would rather forego all business if there was any question as to end-use.

Even so, GM had difficulty keeping track of orders. It's no secret that GM cars, Fords, other autos—and a wide range of other goods—have leaked through the export control fence, via Switzerland, the Low Countries, Manila, Hongkong, despite business' and the government's best efforts. The companies felt themselves in a precarious position, though they continued to accept inquiries and forward them to Washington.

● **Untenable Position**—By 1953, GM felt the position untenable. In Britain, Vauxhall Motors—a GM subsidiary—was under pressure to send a man on a mission to China. GM said no. In the U.S., there were more rules, as the Treasury Dept.'s Foreign Assets Control branch set regulations on China trade. And there was more paper work.

GM washed its hands of the business. A new policy memorandum made the rounds: No business or inquiries of any kind would be accepted from the Soviet bloc, or from "suspicious"

sources. The shutdown was complete. The only cars—or Frigidaires—that GM was prepared to see in Communist lands were unit sales to Western diplomats.

That policy stood—until last week.

Over the past year, GM dealers in Europe, noting the changing tune in the Kremlin, talked up a policy change to GM brass in the U.S. Let us take orders, they said, and leave it up to the government. GM said no.

• **Bulgarian Deal**—Then the government did decide to grant an export license—just before the summit meeting at Geneva. That was for Chevrolets bound for Bulgaria. A New York broker and a GM dealer in Austria cooked up a transaction to ship 500 cars from sources other than GM factories to the Bulgars. The New Yorker got the export license on his own.

When the granting of the license was announced in Washington, GM blew a gasket. Again press headlines spoke of GM selling to the Communists. And while there was no public reaction this time, GM saw to it that the Austrian dealer withdrew from the contract—fast.

• **New Policy Evolves**—Yet at this time, GM had its no-sale policy under review. Well before Geneva, the company noted the Administration had been preparing public opinion for the idea that expanding East-West trade might benefit the West. On Aug. 1, Secy. of Commerce Sinclair Weeks emphasized the government's "long-standing policy" to approve non-strategic shipments to the U.S.S.R. and the European satellites. He cited the Bulgarian Chevies as evidence. Then, Pres. Eisenhower returned from the summit meeting talking about increasing East-West contacts—and especially trade.

So GM made its decision. The new policy means more than just "accepting" Iron Curtain orders; GM expects its people to "sell," though apparently not too ardently. The idea is to be open for business, and to pass the decisions on to Washington.

Whether or not licensers will be granted now for auto shipments is moot. Washington says it will consider each export license application on its merits. Whether or not the positive list of the banned items will be cut further also is open to question. At present, Washington insists the matter of trade is up to the Russians. If relaxation of the strategic lists is worth anything at all to them, let them bargain over it in future international negotiations. If relaxation means little or nothing to the Russians, let the matter lie.

Trade, Washington believes, is only one part of East-West bargaining. Trade will increase—up to the limit of Russian ability to pay, which most experts consider low—as a by-product of other settlements.



Hope Comes From the Cleanup

Brass and copper industry's losses, reckoned a knock-out blow at first, now look less permanent as Connecticut's battered mills dig out.

The water had gone this week and the mud and silt were drying out in Connecticut's battered river valleys. Industry was digging out from beneath the debris that lay along the trail of destruction spread by the deluges that came at the tail of hurricane Diane (BW—Aug. 27 '55, p27).

As they drew up the statistics of destruction and balanced them alongside the results of almost two weeks of cleaning and shoveling in their factories, the chiefs of Connecticut's copper and brass mills were making this prediction: "We'll be back in full swing again in two months, give or take a few weeks."

Hurricane Diane's flood waters raked the Naugatuck valley—where some 40% of the nation's copper and brass production is centered—probably harder than any other area. In one swoop, the rampaging Naugatuck River wrecked buildings, buried machinery in mud, and swept away company records.

• **Softened Blow**—At first, it seemed that the copper and brass mills and fabricating plants had been hit a knock-out blow. But now that the balance sheet of the flood is more clearly drawn the deluge seems to be cause for only temporary discouragement.

One way or another, the industry's big three—American Brass Co., Chase Brass & Copper Co., and Scovill Mfg. Co.—have survived the flood. Scovill's \$690,000 worth of flood damage has barely hurt production. Chase Brass & Copper, which took a \$3-million beating, has transferred as much of its production as possible from damaged Connecticut plants to its two Cleveland mills. American Brass, whacked by a \$15-million loss, has stepped up production at its Buffalo, Detroit, and Kenosha (Wis.) plants to ease the blow.

• **Second Problem**—Though flood dam-

age is the industry's major problem right now, there's another one in the background, almost as big. It's the copper shortage. Even if they had no flood to cope with, many companies would be basing their production on hand-to-mouth copper supplies.

• **Massive Cleanup**—But executives who still faced an unprecedented task of housecleaning hardly had a moment to consider copper supplies.

Since the floodwaters fell, these executives have worked nights and weekends assembling order lists and drying soaked and muddied machinery. They have shown good-humored resilience—plus relief that repairs are getting under way. Company by company, executives draw more or less the same picture:

• Damaged plants will be rebuilt on home ground.

• Once cleaned, machines will hum into operation if work material is available.

• Orders will be filled on an allocation basis.

• Shipments will be trucked until the battered New Haven RR repairs its major freight lines.

• **Case History**—To get a view of what's going on in Connecticut, take a look at the problems one man is facing. He is Gordon W. Somers, president of Waterbury Rolling Mills, Inc.

When the flood came raging down on Waterbury, he spent six hours stranded on the roof of his copper and brass mill. He escaped without injury but a 4-ft.-high torrent poured through his mill.

It will be three or four weeks before the mill's 168 workers clear out the mud and debris and return to routine jobs. Some three weeks later—around mid-October—the first sheets, rolls, and strips to come from the mill since Aug. 18 will be ready for shipment.



Right now only two small motors in the mill are working; about 150 other motors, from 8-hp. to 750-hp., are out of order. Somers estimates his flood damage at \$150,000. "But," he says, "if we have to rewind the motors, or buy new ones, it may come to 10 times that amount."

• **Makeshift**—Somers has already sent more than a dozen of his motors to W. S. Rockwell Co., at Fairfield, for drying in a new oven that Rockwell happened to be testing at the time of the flood. "Outside of that bit of makeshift, we're doing most of our own cooking," Somers says. His workers are cleaning mud and silt from the motors, covering them in asbestos, and putting heat lamps on them for two or three days to dry them out.

Somers has contacted most of his customers, told them that some orders partly processed when the flood hit may be sent to Bridgeport Rolling Mills Co. at Stratford, for completion. But of his full order book, he says, "You can use it if you pull the pages apart, one by one."

After he rehabilitates his mill, Somers will have more problems. Rail service is out. Government loans to cushion the flood-stricken industries' financial blows will take time (page 126). For so small a company, the damage to Somers' Waterbury Rolling Mills is almost disastrous.

For all copper and brass plants that line the Naugatuck, the damage bill totals roughly \$22-million.

• **Big Three**—But in sheer dollars, it was the big three—on whom electrical and auto fabricators, jobbers, smaller shops, and assorted companies depend—that took the biggest wallop. Luckily, these three, with headquarters in Waterbury, are the ones that have alternative production centers.

Here's a close-up of their post-flood recovery:

American Brass. All its Naugatuck plants, which account for 45% of its total production, are digging out. Repair will take from 45 to 60 days. Its plants in Buffalo, Detroit, and Kenosha will work round-the-clock as much as possible to meet orders. Says an execu-

tive, "We won't say how long it will be before we can make shipments to customers."

Chase Brass & Copper. Its Connecticut sheet, rod, wire, and tube mill won't produce for at least two months.

The flood ruined most of the mill's records, but the company collated orders from its 26 branch sales offices and shifted as many as possible to its two Cleveland mills. Working these mills three shifts a day and six days a week, the company expects to operate at about 75% of normal capacity.

Scovill. The largest part—\$500,000—of its \$690,000 loss was at its Waterville Div., which makes plumbing fittings and industrial fasteners. This plant won't be in shape for at least a month, and production of its specialty products cannot be transferred elsewhere. The company's main plant at Waterbury came through with little damage.

So hope is springing up, out of the cleanup along the Naugatuck valley. But there's one question that still hangs in the air: Though the copper and brass industry will stick by the valley, will it ever expand there—or will it put its expansion into flood-free cities like Cleveland?

In Washington, the flood's effect on the brass and copper industry produced plenty of head-scratching. But now the Business & Defense Services Administration is ready to transfer defense orders from damaged mills to plants still in production.

But most transfers—like those that the big three have handled—will be done without government intervention.

BDSA officials expect the real flood-caused bottlenecks in defense production to show up when end-item producers fail to get their shipments from the brass and copper mills. When this happens, Washington will tell military contractors where to place their orders. And when the defense orders are made, the mills will have to fill them first. All this will back up much civilian work. But to help here, BDSA plans to distribute 5,700 tons of refined copper now earmarked for defense to mills with civilian orders.

Steps to Shackle...

... hurricanes come as weather and Army men seek faster warnings, push flood control plans.

The receding waters of the floods unleashed by hurricane Diane on the Northeast's black Friday left not only unprecedented scenes of wreckage and a herculean repair job but an insistent question for the future: Could a repetition be prevented—and how?

Thanks in part to the destructive careers of Diane's predecessors of 1954—Carol, Edna, and Hazel—the Weather Bureau and the Army Corps of Engineers were already embarked, when Diane struck, on a program to learn more about the behavior of hurricanes and to provide earlier and more accurate forecasts of winds, rain, floods.

This year's session of Congress, spurred on by public pressure resulting from the 1954 damage, earmarked a total of \$13-million for these purposes.

• **Three-Pronged**—Because of the more erratic behavior of this year's Connie (BW—Aug. 20 '55, p32) and Diane, there may have to be a shift in emphasis. But already these steps have been taken:

• The Weather Bureau this week opened a new river forecast center at Hartford, Conn., and will open another later this month at Augusta, Ga. These, of course, came out of earlier funds. The new appropriations will provide a string of storm-detection radar stations along the Atlantic-Gulf Coast from Boston to Brownsville.

• Almost as Diane was striking, Army engineers met in Washington to plan for a new hurricane study.

• The chief of engineers, Lt. Gen. Samuel D. Sturgis, has put it up to the New England states to say whether they are willing to pay their share of the added cost of a revamped and extended flood control plan.

Any answer to the prevention problem thus involves at least three distinct, though related, operations—more ad-

equate storm research, improved forecasting and warning, and flood control.

• **Funds**—This year's appropriations by Congress will help people in the areas stricken by Diane and Connie by stepping up research and forecasting. Flood control measures may come later.

Most of the anti-hurricane funds were voted by Congress this year as part of the regular Weather Bureau appropriation. Congress voted the bureau \$4.25-million specifically for counter-measures against hurricanes, tornadoes, and severe storms, and for improvement of warning services. It voted another \$7.5-million for weather facilities over a four-year period.

In addition, Congress provided two funds for hurricane study: a \$500,000 fund for the Weather Bureau, and \$1-million for the Corps of Engineers.

• **Learning**—Aim of the Army Engineers' survey is twofold:

• To learn more about the behavior and frequency of hurricanes.

• To determine "possible means of preventing loss of human lives and damage to property."

The Weather Bureau's own study, also a long-term affair, aims to double present 24-hr. hurricane warnings.

• **Forecasting**—That's the goal, of course, of all the surveys and the new equipment—faster and better forecasting and warning. Some Weather Bureau people, for instance, think rainfall predictions for Diane might have been sharpened and pinpointed if the bureau had a radar station in Jersey.

• **Dead Ends**—But when you come to flood forecasts on rivers you run up against one of the dead ends in forecasting. On larger rivers such as the Delaware and Connecticut, the Weather Bureau can and does forecast flood stages accurately.

But much of the worst damage and loss of life from Diane came in flash floods on creeks and little rivers. Even if the Weather Bureau had full hydrologic and topographic data, it couldn't get out a forecast in time.

Also the rains from Diane struck downstream in New England from the normal rainfall pattern. Dams built on the basis of 1936 and 1938 experience were above the Diane rain area, and largely ineffective. The places worst hit are congested areas where it is difficult to build even levees.

• **Control**—Previous flood control measures did help some. Only one of the five completed Army dams in the Connecticut River basin (Knightville) was effective for Diane—but it saved an estimated \$11.5-million in damages.

The original Army Engineers' plan for the basin included 18 other dams authorized by Congress but for which money was never appropriated. Advocates are winding up for a hard pitch to try to put through a modified plan.



OUT Lingan A. Warren, who has been at the helm of Safeway Stores, Inc., for 21 years.



IN Robert A. Magowan (top) as board chairman, Milton L. Selby (below) as president, in a . . .

Shakeup at Safeway

Lingan A. Warren, the man who led Safeway Stores, Inc., into the No. 2 spot among the nation's food retailers, suddenly resigned from his job this week. Strictly speaking, he resigned several jobs, for he was not only president but also general manager and a director.

The two men above will fill the hole left by his resignation. Going in as chairman is Robert A. Magowan, a general partner in Merrill Lynch, Pierce, Fenner & Beane, the New York financial house that has played a major part in shaping Safeway's career. The chairman's spot hasn't been filled since M. B. Skaggs resigned in 1941.

Milton L. Selby, now serving as vice-president and treasurer of Safeway, will become president. Selby, whose father was an officer of Safeway at its inception in 1934, has been an officer and director for years. As a lawyer, he has chiefly concerned himself with legal, real estate, financing, and equipment matters.

• **Warren's Role**—Warren doesn't intend to go into total retirement. If the stockholders approve the management changes at a special meeting on October 3, he will continue in a "consulting and advisory capacity."

Warren's move was unexpected. The reasons behind it are not entirely clear, but three major points stand out:

Point I. At age 66, he has been running Safeway for 21 years and may feel the strain more than he did earlier. He was not forced out by an automatic retirement age, since the company sets none for executives.

Point II. His retirement could be a combination of his age and of the difficulties that Safeway has recently experienced. As a factor in retailing, the company is hardly faltering; the report for the 24 weeks ended June 18 shows that sales increased from \$821.8-million for the period last year to \$887.2-million this year. Yet Safeway has had all kinds of troubles recently—with trading stamps, legal suits, strikes, shrinkage in profits.

It might be said that Warren—who, as one observer puts it, "runs not a one-man company but a strong-man company"—has lost the sure, magic touch that helped build up the company. Like Gen. Robert E. Wood of Sears, Roebuck & Co., Warren is a rather crusty individualist, with firm convictions and an unswerving devotion to the principles of mass, low-cost distribution. Under this banner he has fought national-brand manufacturers wherever they seemed to cramp the freedom of the retailer to set his own prices and policies.

Point III. Merrill Lynch is still calling the tune at Safeway.

It was Charles Merrill, senior partner of the New York firm, who put Warren in the job back in 1934 (the two had met on a golf course). But according to an informed guess, Merrill Lynch owns well under 10% of Safeway's stock—far from enough to control the company.

Magowan is Merrill's son-in-law, as well as a Merrill Lynch partner.

• **Safeway's Troubles**—Safeway's present biggest troubles stem from the inroads that trading stamps have been making in its business, particularly in its home territory in the West and Southwest. Warren has vigorously opposed trading stamps as merely another form of price-cutting, and an unsound one at that.

Safeway's retaliation in the form of outright price-cutting has led to legal troubles. The Justice Dept. has brought a Robinson-Patman anti-price-discrimination case against Safeway in the New Mexico-Texas area. It charges that the price cuts the chain says it made in self-defense were actually an "intentional" and successful attempt to drive competitors out of business (BW-Jul. 16'55, p109).

• **Strategy Shift**—The battle has put a strain on Safeway, and its strategy toward trading stamps has wavered in recent months. In Oklahoma it has tried out its own variant of trading stamps, called "Cashsaver Coupons" (BW-Apr. 2'55, p56). The chain described these frankly as an "expedient."

• **Pulling In Horns**—Safeway has also been faced with declining profits—the direct result, the company has maintained, of the cost of fighting the trading stamp battle. Net income for the recent 24-week period was \$4.5-million as against \$5.9-million last year for the same period. That continued a decline of 1954 from 1953, despite increased volume.

Within the past few weeks Safeway has announced postponement of two major expansion moves, one in Houston and one in Toronto. In both cities it had planned major distribution centers, to feed a ring of supermarkets. The official explanation is that these plans were called off after "a management reappraisal of commitments for new stores and remodeling in territory in which the company is already operating."

One further explanation from a company spokesman is that Safeway has decided to invest its funds in improving its old low-volume stores (\$16,000 sales a week) to bring them up to the weekly average volume of the newer ones (\$32,000 a week).

On top of all this, Safeway also suffered from a costly strike of clerks and meat cutters earlier in the summer. This closed all the chain's stores in the New York City area between June 9 and Aug. 8.

Westinghouse Off Fair Trade

Company is the latest appliance maker to admit it can't control prices at retail. To police its 250,000 dealers is a "formidable task."

Slowly but surely, appliance makers are being forced to admit openly that in today's market they are unable to administer prices at the retail level. The most recent company to throw in the sponge is Westinghouse Electric Corp., which this week announced that it is abolishing "fair trade" pricing.

From Mansfield, Ohio, the center of Westinghouse small appliance production, went a letter to all distributors saying that as of Sept. 1 there would be no more resale price maintenance on what Westinghouse calls "portable" appliances. This includes everything that Westinghouse fair trades, from frying pans and toasters to electric blankets and sheets. From now on, says John J. Anderson, manager of portable appliances, Westinghouse will only issue suggested retail prices.

• **Loophole**—The company offers several reasons for its action, all of which can be summed up in one sentence in the letter to the distributors: "We believe in fair trade, but under present conditions do not believe it workable." However, the company left a loophole for itself by saying that "as conditions change in the future, our price policy may also change."

The announcement was not precisely a bombshell in the trade. A dealer summed up trade opinion when he remarked laconically, on hearing the news, "It's about time."

• **Fact Facing**—Admittedly, Westinghouse's move is merely the recognition of present conditions on the appliance retailing front, where price-cutting—particularly in small appliances—is endemic.

Westinghouse says that it has tried to enforce resale price maintenance "everywhere possible" by warning dealers and seeking injunctions. It has been less active in policing prices than General Electric Co., which has brought a number of suits and spent considerable money on enforcement. But Westinghouse believes it had a vigorous policy.

The trade doesn't agree. One discount house in the New York City area, for example, says that it has had no trouble although it has cut Westinghouse prices openly. In its opinion, Westinghouse has cracked down only where price cuts have been advertised. In general, this jibes with observations by other retailers and distributors.

• **Less Protection**—Westinghouse's recognition of the situation in the market-

place ties in with the action of General Electric, which several months ago abandoned list pricing on major appliances (BW-Nov. 27'54, p25). This was similarly a recognition of inability to control prices at retail.

Both actions point up the difficulty manufacturers face when they try to reconcile the conditions brought about by today's mass-production and mass-distribution with the older idea of selective, franchised distribution. Manufacturers, in pumping out a steady stream of goods, can no longer offer dealers protection.

• **Police Work**—The magnitude of the problem can be seen in the fact that to distribute its small appliances to today's market, Westinghouse has something more than 250,000 dealers of all kinds, from drug to department stores. To police them is what Anderson describes as a "formidable task."

Some observers wondered if Westinghouse's action might have been stimulated by dropping appliance sales and a desire to stimulate business. But the trade fails to corroborate this. Dealers and distributors report that Westinghouse small appliances are doing well this year, better than last. Westinghouse itself says some of its small appliances are doing "unusually well."

• **Sales Prod**—Initially, of course, Westinghouse's move may needle sales considerably.

Retailers see a good possibility that Westinghouse small appliances will become, for a while at least, a price football. They think it quite probable that with no holds barred on advertising cut prices, department stores in particular will use Westinghouse appliances as loss-leaders in their fight with the discount houses.

Westinghouse itself is prepared for at least a small display of dealer ill-will as a result of its action. But both the company and the trade agree that though a few dealers may drop Westinghouse appliances by way of protest, nothing serious will happen.

• **Competition**—What will happen to Westinghouse competitively, as regards General Electric and its other major competition, remains to be seen. One view is that General Electric could, for instance, capitalize on the move by pointing out that it still has price maintenance on small appliances.

GE's own comment on the Westinghouse move and what it will mean to GE's fair trade setup is "no effect."

Salk Vaccine

There may have been a near disaster last spring. But the vaccine seems to be working.

Salk polio vaccine made news again last week and this, but behind the headlines two significant points stand out:

• The nation escaped what well might have been the worst polio epidemic in its history last spring, when the U.S. Public Health Service was rejudging its standards for testing the vaccine's safety and potency.

• Reports coming in from the field indicate that the vaccine is working. The polio rate is considerably lower among children who have received shots than among those who have not.

• **Government Slip**—The terrifying fact that the government wasn't sure of its own safety standards was admitted last week in the official USPHS report on the so-called Cutter incident (page 148). (This is the study USPHS has been running to find out what caused the polio cases last April among children who had been vaccinated with salk vaccine produced first by Cutter Laboratories, Inc., of Berkeley, Calif., later by other makers.) The report found that six batches of Cutter vaccine contained enough live polio virus to cause 103 of the reported cases.

The government admitted its own safety tests weren't adequate to detect the live virus. The report also substantiated the fact that manufacturers other than Cutter had trouble with early safety standards last spring, before USPHS drastically revised its requirements late in May.

Apparently, if the safety requirements had not been changed, a large part of the vaccine used in the program could have been as dangerous as the Cutter material. This seems especially likely in view of the fact, not included in the USPHS report, that the government also changed its requirements on potency only a week after the program was begun, dropping the vaccine's strength by two-thirds. The six batches of Cutter vaccine were among the first to meet the government's original potency standards—three times the strength of the vaccine approved seven days later. If all vaccine had been as strong as USPHS first required, and had met only the original safety requirements, the effect could have been disastrous.

• **Good News**—On the cheerier side, New York—state and city—health authorities reported at midweek that the vaccine has been "of value." Of 519,000 children in the 6-7-year-old group who got at least one shot, 15 cases of para-

lytic polio turned up. Among 367,000 children of the same age and school-grade group who did not receive shots, 26 cases were reported, a rate almost twice as high.

In Massachusetts, where polio has reached near-epidemic proportions, there are currently 15 cases per 10,000 among unvaccinated 5-year-olds. Those receiving one Salk shot had a rate one-

fifth that amount, and those with two or more, one-twentieth of it.

The USPHS report is probably the next to last action the service will take in respect to Cutter. Since it did not find Cutter guilty of negligence PHS may soon begin to clear batches of Cutter's material under its new standards. Cutter, as yet, has not requested clearance on any such material.

Bank Loans Will Cost More

Higher discount rate set by district Reserve banks will help put a brake on inflation by tightening up on speculative borrowing.

The Federal Reserve System posted another go-slow sign on credit this week. District Reserve banks began raising the discount rate—the second time in a month for most of them—that means that the cost of business borrowing will continue to climb.

Atlanta led off, followed by St. Louis. Both hiked the discount rate a quarter of a percent—from 2% to 2 1/4%, highest since 1934. At midweek, commercial bankers in New York, Boston, Kansas City, Richmond, and Dallas were expecting similar action in their districts.

These new increases reflect Washington's vigorous intention to discourage speculative borrowing and to restrict the use of credit to legitimate needs. Early last month, it approved the Cleveland request for a rise from 1 1/4% to 2 1/4%. At that time, the other districts were more cautious, and raised the rate to only 2%. Now they are falling in line.

• **Uniform Rate**—As usual, officials of the Federal Reserve in Washington were loath to predict what district banks will do. But one official pointed out that the 2 1/4% rate is likely to become general this time because the district directors "have had time to see what Cleveland's experience has been."

Some commercial bankers thought Cleveland's experiment with a 1/4% jump in one whack was devised deliberately by the Federal Reserve System to test the credit situation. "If the reaction had been bad, then Cleveland could have dropped down to 2% along with the rest of the country," one banker said. "Now it looks like we will all be paying 2 1/4% at the discount window."

There's no doubt that the entire system eventually will adopt the 2 1/4% rate. The practice of maintaining varying rates has sometimes been followed in the past, but most Federal Reserve authorities favor a uniform rate.

Thus, it is likely that the new rate will be adopted unanimously within the next few weeks, so that the commercial

banks are put on notice of the Fed's restrictive policy in advance of the traditional fall upswing in demand for credit. In addition, the Fed wants stabilized credit conditions before the Treasurer's financing operation comes up in October.

• **Tightening Up**—The expected increase already is being anticipated in New York's money market. This week, the rate on 91-day Treasury bills, the traditional indicator of money conditions, rose over 2% for the first time since the tight money days of 1953. Federal funds—temporary loans between banks—also were quoted at over 2%, which indicated that tightness was prevalent throughout the banking system. And the major finance companies were forced to boost their rates by 1%, the seventh increase this year.

"Money is already damned tight," observed one New York banker. "But the Fed is going to make things much tighter before we see any loosening."

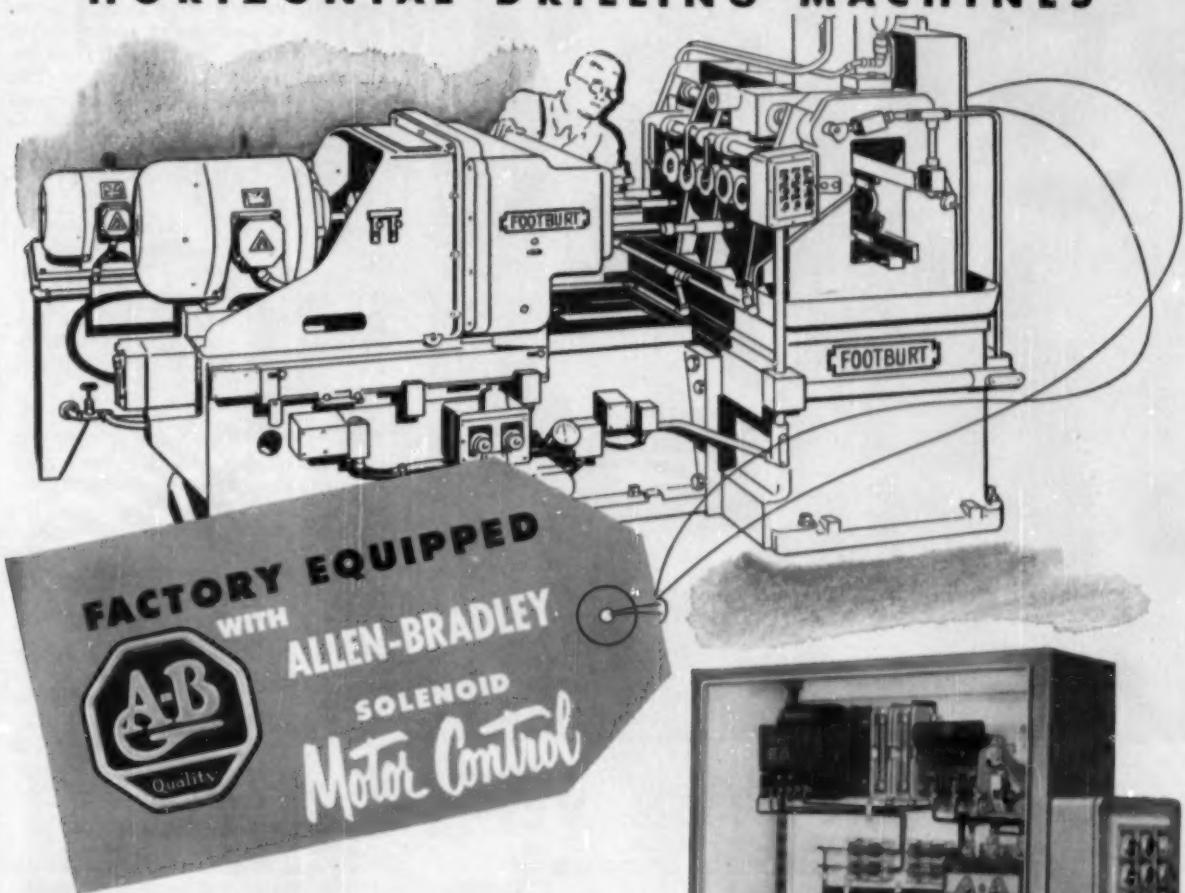
That's because the new rise will force commercial bankers to pay more for the money they borrow at the Federal Reserve for relending. This will lead to a tougher scrutiny on business loans. And it may bring another hike in the prime rate that the banks charge their best risks. The banks are already very selective about extending loans, which means the downgrading of many borrowers.

• **Loans Increase**—The rise that has taken place in borrowing costs to date has not led to any decline in demand for loans. This is what is worrying the Fed. In the past seven weeks alone, commercial loans made by member banks increased \$439-million, compared with a \$1.1-billion decline during the same period a year ago.

Increasing the discount rate to 2 1/4% represents a 50% rise over the past six months. So far, this has led to a pressure on the interest rate structure, but it has not put any crimp in actual borrowing.

FOOTBURT

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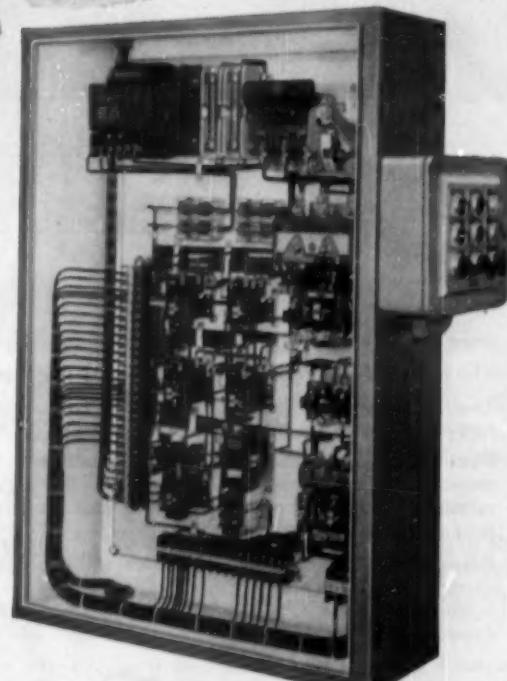


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BUSINESS BRIEFS

Georgia power co-ops won their fight for the right to buy electricity directly from the federal government as preferential customers. Georgia Power Co. agreed tentatively with Interior Dept. to act as a government contractor in carrying power from Clark Hill Dam, on the Savannah River, to the co-ops. The utility had previously offered to buy all the power from the government, resell it to the co-ops at fixed rates (BW-Feb. 27 '54, p28), but the co-ops balked.

The race to be Canada's first privately owned uranium processor (BW-Feb. 5 '55, p66) ended in a tie. Two companies went into production last weekend: Gunnar Mines, Ltd., in northern Saskatchewan, and Pronto Uranium Mines, Ltd., in the Blind River area of Ontario (page 64).

Power of the Pres.: A few months ago, Pres. Eisenhower picked a seven-place executive type Aero Commander plane for his shorter trips. This week the builder, Aero Design & Engineering Co. of Oklahoma City, announced that it is tripling its capacity for making this plane.

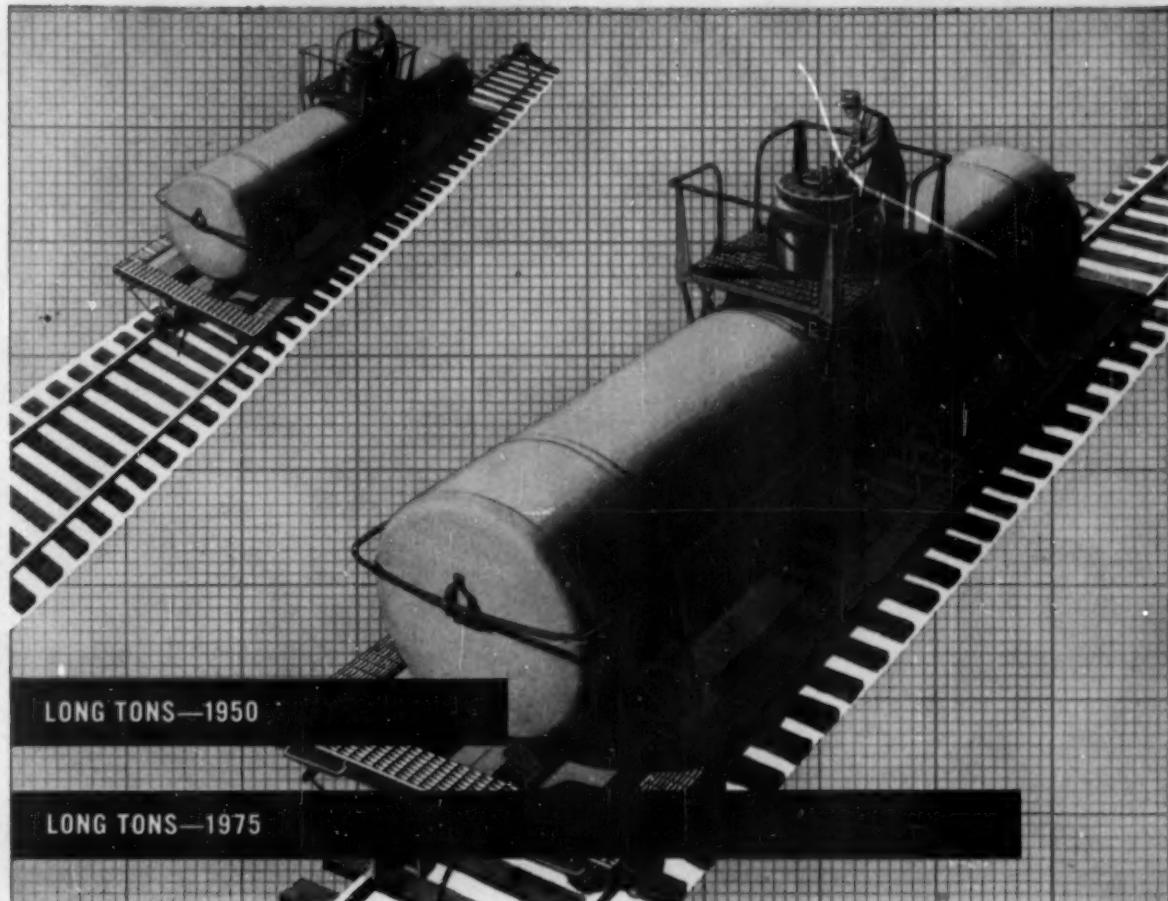
The biggest non-Bell telephone company, General Telephone Corp. (BW-Nov. 7 '53, p178), will merge with the second largest, Theodore Gary & Co., in an exchange of stock. General is chiefly in the telephone operating business and Gary in equipment manufacturing.

From coal to underwear: Philadelphia & Reading Coal & Iron Co., rated as the nation's second largest producer of anthracite, changed its name this week to Philadelphia & Reading Corp. and added a male underwear division. P&R lost \$7.3-million on mining operations in 1954, while Union Underwear Co., its new subsidiary, ran up sales of \$28-million in its latest year.

Big car orders: Boston & Maine RR ordered 1,000 rollerbearing box cars from Pullman Standard Mfg. Co., costing about \$8-million, for delivery early next year. . . . Erie RR is buying another 500 box cars besides the 550 ordered last weekend from Greenville Steel Car Co., Greenville, Pa.

To step up capacity to produce turbines for ship propulsion, the government will buy \$70-million worth of machine tools and production equipment. Standby production lines will be set up in plants of eight companies, which will be paid to maintain the equipment until it's needed.

H_2SO_4 ...how many carloads in 1975?



Sulfuric acid (H_2SO_4) is the largest volume product of the chemical industry. Demand for it should increase from 3,735 thousand long tons in 1950 to an estimated 8,459 thousand long tons in 1975*...an increase of 126%.

This estimate is based on a careful study of the needs of America's expanding population and suggests the possibilities of growth in the chemical and many other segments of industry.

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*Estimate taken from *A Report to the President by The President's Materials Policy Commission*

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WASHINGTON OUTLOOK

WASHINGTON
BUREAU
SEPT. 3, 1955



Business forecasts behind the new budget review are revealing.

Point No. 1 is that they seem to be on the conservative side—based primarily on an extension of summer business levels, with little allowance for a possible fall upturn.

Point No. 2 is that they show a division among official Washington analysts on what's ahead. Career economists, it develops, are more optimistic than Administration top managers.

Here are a few facts that were lost in the news stories on receipts and spending. Note how they bear on 1956 tax cutting prospects:

Corporate profits for 1955 are figured at about \$40.6-billion for tax estimating purposes. That's nearly \$2-billion below the estimated second-quarter rate, and it's under 1951's record \$41.2-billion. Profits yield nearly one-third of the Treasury's receipts.

Personal income is figured at about \$300-billion, the second-quarter rate, with little allowance for rising wages. The Treasury gets a little more than half its tax receipts from individuals.

Consumer spending—important in figuring excise tax collections, which account for 15% of revenue—is projected at about \$250-billion. It, too, will be influenced by rising wages.

The defense of the "conservative" revenue estimates is that credit restraints imposed this summer to keep the boom in hand haven't yet had their full effect on business. Aim of the restraints is to hold the economy close to level in the months ahead, and thus reduce the danger of price rises. More and more increases have been showing up at the raw materials level, but so far they haven't worked through to consumers to any marked extent.

If the credit policy does work as planned, it may well be that the new revenue estimate of \$62.1-billion for the year ending next June 30 will be close to the mark, leaving a deficit of \$1.7-billion.

The argument of the optimists is that the boom will be resumed this fall, despite the credit restraints.

They foresee a sharply rising economy, with a possibility that corporate profits may come close to \$43-billion for the year, and that the income of individuals will be close to \$303-billion. If they should be right on their forecasts, receipts for the fiscal year ending next June 30 might very well exceed scheduled spending, and give the Administration a balanced budget. But it's generally agreed that a fall resumption of the boom trend might well make rising prices an election-year issue.

Tax implications are pretty clear. Politics are on the side of a cut in the 1956 election year, even if there is a deficit. A balanced budget not only would guarantee tax cuts, but would make them bigger than now predicted. The argument would be that this new stimulus to business would prevent tax relief from throwing the budget out of kilter again.

Inventories are being watched closely by Pres. Eisenhower's consultants. The Commerce Dept., which reports inventories on a monthly basis,

WASHINGTON OUTLOOK (Continued)

WASHINGTON
BUREAU
SEPT. 3, 1955

now supplies a private weekly report to Dr. Arthur F. Burns, chairman of the President's Council of Economic Advisers. Inventories currently seem healthy when related to sales. But Burns is unhappy over the quality of inventory statistics, and is pushing for improvement.

—•—
Price differentials on defense contracts: Last December, the Pentagon announced a policy of developing multiple sources for key defense items.

The plan included payment of premium prices to companies the government wanted to keep in production or get into production even though they couldn't meet the bids of competitors. A few such price differential contracts are trickling out. The Defense Dept. has approved 11 for the Navy, mostly for electronic gear. Companies getting these contracts include General Electric Co., Avco Mfg. Corp's. Crosley Div., and Sangamo Electric Co.

—•—
Government-backed flood insurance in time for the 1956 hurricane season is a pretty good bet. It will take legislation. The plan is to work out some type of government-private insurance program to submit to Congress early in the session starting next January.

—•—
A new round of military construction will grow out of the recently enacted Military Reserve program. It will get started on a small scale next year, and cost upwards of \$1-billion by 1960.

—•—
A new rumpus over leasing of government-owned machine tools is in the making. It could bring Congress back into this long-standing dispute between the tool makers and defense agencies. The points at issue:

Renting of tools for non-defense production is regarded by the makers as a form of "government competition." General policy of the Office of Defense Mobilization is to limit leasing to defense production—but there are exceptions. A pending case is a Pentagon-approved request by General Motors' Allison Div. to use \$5-million of government tools to make civilian truck transmissions. If ODM O.K.'s this, tool makers will protest.

The rental rate also is in dispute. The government charges 1% of a machine's acquisition cost per month. The industry says this undercuts commercial rental rates. But ODM is standing pat.

—•—
Democratic leaders are worrying about some of their allies.

The needling by the ADA—Americans for Democratic Action—is irritating. This is the extreme New Deal-Fair Deal wing of the party and it is vocal—demanding that Congress go after Eisenhower and his programs. Its latest prodding was the charge that the Senate investigation of Eisenhower's security risk program is a "kid glove" affair. The investigating committee is controlled by Democrats.

Political activity of the unions is being watched, too. Most of the leaders in the merging AFL and CIO are for the Democrats. And "too much" union influence in the party's 1956 bid for a White House comeback might widen the split between the northern and southern wings.

—•—
Unions will make a big play for women voters who were important in the GOP's 1952 White House victory.

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COLOR IN THE BANK. See how this bank—The Equitable Security Trust Co., Wilmington, Del.—transformed their office into a show place to be proud of... through GF color planning



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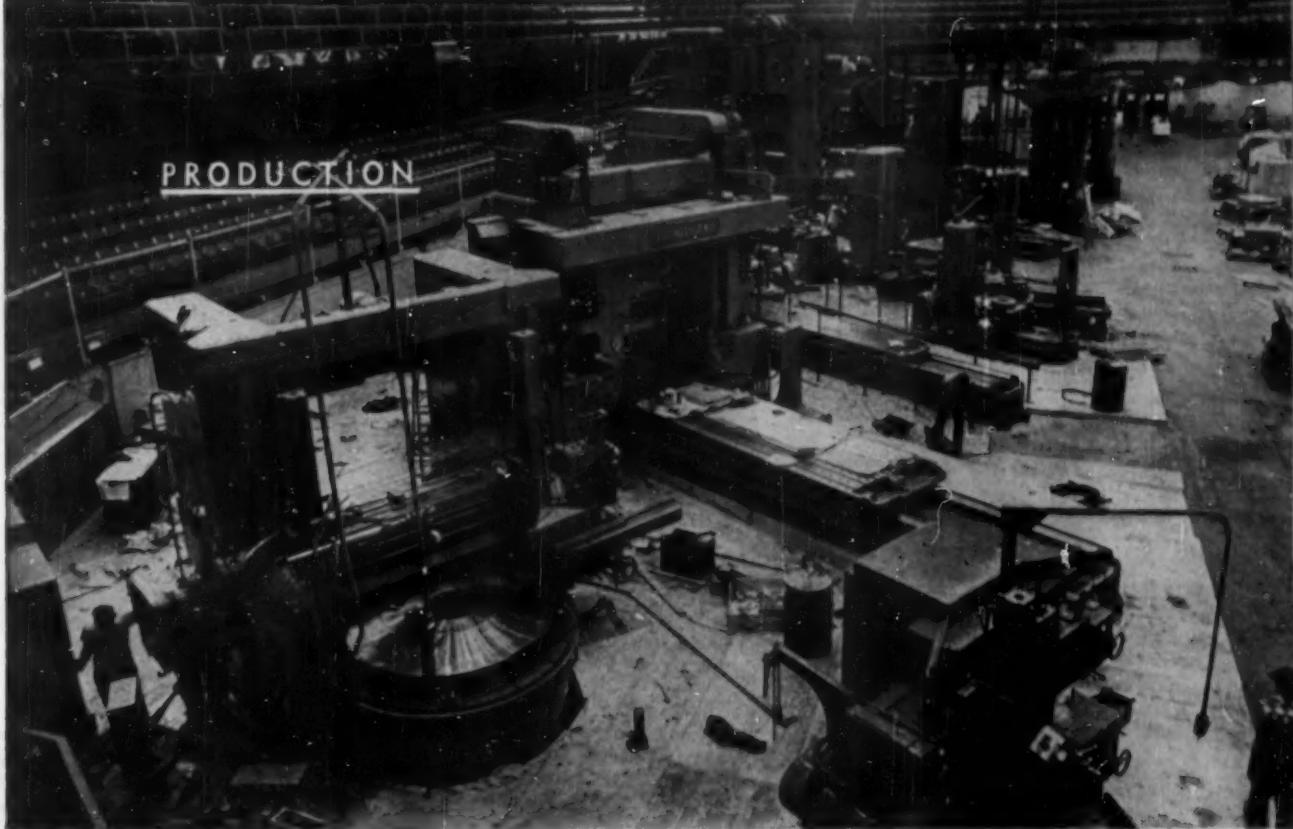
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PRODUCTION



A \$20-million display of new machine tools at Chicago's International Amphitheatre demonstrates to manufacturers how built-in brains and automation are eliminating a lot of steps in the old operating routine.

Thinking Tools Put On a Show

Next week in Chicago, businessmen will shove through the gates at the International Amphitheatre, and into the Machine Tool Show.

From Sept. 6-17, an estimated 100,000 visitors will rubberneck and make deals over \$20-million worth of new machine tools on display.

And at the Navy Pier uptown, accessory manufacturers of controls, cutting tools, measuring devices, and the like are showing off another raft of exhibits, called the Production Engineering Show. Show-wise, it is the biggest thing in the metalworking industry since 1947, the year of the last one. Right now, at companies where gouging a piece of metal with a cutting tool is a must, board chairmen, purchasing agents, and engineers are double checking their reservations for the shows.

• **Salesmen**—Their first sight will be of the machine builders themselves, standing at their exhibits next Tuesday morning, with salesman-like gleam in their eyes. They stand to rack up millions in machine tool sales.

But that's only the beginning.

American Machinist, a McGraw-Hill publication, reported this week that industry will buy between \$1-billion and \$2-billion worth of tools and presses over the next 18 months (page 148). Nearly 75% of the spending reported by A-M is by the auto industry or related to it. There are big spenders, too, among the small companies of 500 employees or less. Their spending for tools will come close to \$40-million.

• **Super Tools**—The most striking feature of the show, says M. A. Hollengreen, president of Landis Tool Co., Waynesboro, Pa., and the National Machine Tool Builders Assn., is the shift to automation. Compared to 1947, there is less dependence on the craft of the machinist. More or less, today's machines are designed to "think" and to react automatically during a cutting job, a quality check, or a loading and unloading operation. But the standard, less glamorous machines are far from being plain Janes. Despite their lack of automation, run-of-the-catalog models go at higher outputs. The boost comes from developments in parts and

operations overlooked for years, improvements more complex than simply running the machines faster, and using tougher cutting materials.

• **New Developments**—The Chicago shindig clearly shows that machine tools—a so-called stodgy industry—have joined the world of servomechanisms, electronic computers, and memory devices. Eight years ago—before the coining of the word automation—automatic controls didn't go much beyond devices to feed, clamp, and eject parts. Practically every manufacturer now has that in his machines. And some have advanced their engineering and designs to what they call automation.

There are really three major developments that you'll notice at the show. The first is that the old operating routine—the one of load, start, stop, measure, and unload—is dead. With control devices, a machine now completes a work cycle automatically. Second a machine can work within extremely close tolerances, and correct its own errors—all without shutting down for adjustments. The final touch is connecting



SCOOTER transports personnel around amphitheater, while a helicopter stands by to take them to the other machine tool show at the Navy Pier uptown.



SCHEDULING the arrival of equipment is a ticklish job. The heaviest pieces have to be installed first so that they won't have to squeeze around lighter stuff.

different machines that perform progressive production jobs using the automatic controls for loading, machining, checking, and unloading.

• **Tinkers All**—In that class, the show models do everything from the automatic cycling to the simpler step of positioning a cutting tool. Here are some of the tools using "thinking" type controls:

Automatic cycle: Jones & Lamson Machine Co. has a turret lathe that's steered by a tape recorded with control signals. Similarly, a giant tool of Giddings & Lewis Machine Tool Co. cuts out whole jet wing sections, guided by a paper tape. Bullard Co. has adapted an electronic memory to the control of its horizontal boring, drilling, and milling machine.

Self-resetting tools: There are lathes built by Jones & Lamson, Gisholt Machine Co., Sundstrand Machine Tool Co.; Lees-Bradner Co. and Michigan Tool Co., have gear hobs using the same principle.

Programming: On radial drills, 20 different operating speeds and rates of feeding the cutting tool are programmed by electromechanical controls in sequence or in combination. The manufacturers are Carlton Machine Tool Co. and Cincinnati-Bickford Tool Co.

Positioning: By simply setting a series of numbered dials beforehand, you can automatically position the tool on a jig borer of Fosdick Machine Tool Co.

• **Marital Problems**—The marriage of machine tools and automatic controls has introduced a few rough spots for the builders. Hollengreen of Landis, which has developed automation for its precision grinders, says the wedding

has increased work loads, and created a demand for control specialists formerly foreign to tool builders. Now, a well-controlled machine will need 300 to 500 more hours of engineering in addition to its basic design time. When finished, the machine might take twice the usual time for testing. The controls and handling devices often double a tool's original cost.

• **Solutions**—Standard models, the machines making up the greatest number at the show, will display a big improvement thanks to extra accessories, or through making a conventional machine movement do a little more work than usual. Several manufacturers are adding heavy duty hoists to their big machines to make loading and unloading easier. With higher production rates, machines are piling up more chips, the waste from machining a part. So the builders have relocated controls and moving components above or behind the work area; that leaves more room for chips to fall and be carried away. G. A. Gray Co. has a universal planing machine whose tool cuts the work on both its forward and reverse stroke, instead of cutting only in one direction. That idea has been bandied around for years, but never tried commercially until now.

• **Staging the Show**—Putting the show together has had all of the work and difficulties of equipping a mammoth, real-life plant—possibly more, because the machines will be shipped back home again after Sept. 17. For the exhibitors, and for Clapp & Poliak, Inc., the exhibit management, the show actually began about July 1, when equipment first began moving in. The first of the 523 machines rolled in on flat cars

and trailers from 166 manufacturers. To make room, the show producers tacked an additional 180,000 sq. ft. of exhibit space on to the amphitheatre, making it the biggest covered exhibit space in the U.S.

Scheduling of shipments is critical, too. A 50-ton press must arrive on time before other machines come squeezing in around it. The handling and erection alone will cost some manufacturers from \$5,000 to \$7,000. By curtain time, these extra costs probably will run up to a total of another \$20-million.

• **Refinements**—One-way radios, helicopters, and airplanes are getting a try-out to speed up communications and service. The Clapp & Poliak brass summon their floor managers by a kind of radio that makes a buzz in receivers carried by each manager. He calls back to the head office on the house phone. Clapp & Poliak will use helicopters to shuttle personnel between the amphitheatre and the pier. The ride is gratis, but for exhibitors only. Kearney & Trecker Corp., which is sponsoring a \$600,000 exhibit, has seven airplanes to ferry customers and prospects to its Milwaukee plant, where it will have a supplementary show of aircraft and special machine tools.

U.S. Rubber Turns Out Material by the Yard

U. S. Rubber Co. last week announced a new process to turn out rubber parts that are as accurate as conventional press moldings but cheaper and faster to produce. The new process, called continuous molding, can make forms that are as long as desired, within the limits of the size of the reel used in shipping.

Usually rubber parts that are too long for press molding must be produced by extruding. With the new process, they can be made of softer stock and to more precise tolerances. This is especially important where a part is compressed during installation and must expand to its full size later.

Since the parts are manufactured in a continuous piece, the customer can cut the exact length he needs for a particular job. This eliminates scrap and reduces the cost of splicing. Splicing costs can sometimes run as high as the price of the rubber itself.

At its Fort Wayne (Ind.) plant, U.S. Rubber is now producing continuous molded gaskets for concrete pipe manufacturers. The company says that these greatly lessen the possibility of pipes breaking during installation.

Other uses being tested: auto parts (the average car has over 350 molded rubber parts), seals for double windows, and sink spray hose. **END**



"Superior" tubing cuts 80% of cost of filling tube in Sheaffer's Snorkel pen

The interior diameter of the filling tube in Sheaffer's new Snorkel pen is only .052". Originally this tube was made of 14K gold to prevent corrosion. But SUPERIOR metallurgical and production consultation achieved equivalent results at lower costs by using a substitute high nickel alloy material for this mass-production item. The material had every advantage. It was resistant to the corrosive action of ink. It had the required rigidity. It could be easily worked. Most important, however, it reduced the cost of the filling tube in the Snorkel pen nearly 80%.

The moral of this story is this: whenever you have a tubing problem, it pays you to consult tubing specialists. Write SUPERIOR TUBE COMPANY, 2009 Germantown Ave., Norristown, Pa. *On the West Coast:* Pacific Tube Company, 3710 Smithway St., Los Angeles 22, Calif.

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NO STRONGMAN builder, homeowner Dean Emerson totes 108 board feet of slabs (weight: 20 lb.) for his plastic-made house.

Plastics: A Bite at Home Building

Plastics are taking their first bite into what could become a huge new field for the industry. The bite is a small one, but it's significant because it could be the first visible sign that plastics are getting into the home construction business.

Witnesses to this sign are the citizens of one of the swankiest neighborhoods of Houston, Tex. Close by them, these last few weeks, builders have been putting together a house that's made mostly of plastic. Its walls and roof—and the floor of one of its rooms—are made from a white feather-light material called Styrofoam.

Houston businessman Dean Emerson is building the house. He chose plastic for at least one good reason—he is a Houston area distributor of Styrofoam. Emerson and his family will move into their new plastic home (pictures) in about three weeks.

Getting into the construction field is quite a change for Styrofoam. It's not a new plastic by any means—Dow

Chemical Co. has been producing it for 17 years. Chances are that you have seen it most often as a sugar-like plastic used in many window displays, especially around Christmastime. Nobody—until Emerson came along—has ever used it to build a house.

Dow looks on Styrofoam as a space insulator. Its big market has been the cooler-freezer field. Dow does not sell it as a building material because it cannot carry heavy loads. (You can deform it by squeezing it between your fingers.) Dow does not recommend Styrofoam for the loadbearing members of a house, though it is testing the plastic in that role. Emerson's house was a surprise for Dow—it was in the planning stage before the company knew about it.

• **Gaining Strength**—Emerson called in Francis J. Niven, a consulting engineer, to figure out a way to build strength into the structure. Says Niven, "Styrofoam by itself would be entirely unusable. But with cement and plaster

it gains immeasurable strength. . . ."

In an early test, Niven and Emerson took a Styrofoam board, 9 ft. long, 1 ft. wide, and 3 in. thick, and coated it on both sides with an inch of cement. They stood the board on end and put a 3,000-lb. load on it. This is about equivalent to the load on the walls of a two-story building. The board stood up well under the load. So Niven decided he could make Styrofoam work in Emerson's one-story ranch house.

• **Building Program**—The pictures show how the walls were built. Boards were laid in parallel courses. Joints were staggered and tightly butted. Vertical seams were filled with a water-proofing compound. Wires were strung from ceiling to floor, parallel with the walls, to pre-stress and compact the Styrofoam boards. Then the boards were given a 1-in. coat of cement stucco on the outside and a 1-in. coat of plaster on the inside, making each wall 5-in. thick.

Niven says the walls will stand up in a 200-mph. gale. They'll stay dry, too, because Styrofoam does not absorb moisture. It is inert, so bugs don't like it. Cost of the wall is about 85¢ per sq. ft. A brick veneer wall, fully insulated, would cost about \$1.25 per sq. ft.

Styrofoam shingles with a 4-in. coating of concrete cover the roof. Cost is about the same as a shingle roof. "You'll be able to build a bonfire on it," says Emerson.

Emerson is using Styrofoam as flooring in one room. He wanted an elegant floor, so he put marble tiles over the Styrofoam base. A test showed that even the weight of a grand piano would not crack it. Styrofoam's insulating characteristics keep the marble at room temperature.

• **Result**—By present-day standards, the house is large: 3,200 sq. ft., including 400 sq. ft. of garage space. It will have a large living room, a dining room, den, four bedrooms, and three baths. Emerson says it has cost him \$30,000 to build. He figures that a similar house, built with more conventional materials, would cost at least \$35,000.

One thing that helped him trim construction costs is the ease with which the material can be handled. One of those 9-ft. Styrofoam boards weighs only 4½ lb. You can cut it with a knife or a saw.

Because Styrofoam is primarily an insulator, Emerson finds that he will be able to cut costs of air-conditioning and heating. Normally, a house the size of his would require a five-ton air-conditioner. But he will get by with a three-ton unit.

For heat, he would normally need a 150-thousand Btu. unit. Instead, he will use an 80-thousand Btu. unit. He says, "My 3-in. Styrofoam walls will give me insulation equal to that in the average deep freeze."

• **The Trend**—You can put down Emerson's experiment as just one of a number of plastic straws-in-the-wind. He and Dow are by no means the only ones who are thinking of a bigger place for plastics in the construction industry.

Just a couple of weeks ago, Monsanto Chemical Co. said it was preparing to investigate how plastics could be used in the construction industry. Monsanto now has close to 100 people working in this program. Said Michael F. X. Gigliotti, who heads the project, "We believe that plastics have a tremendous future in the building industry, but we want to be sure that the glamor attached to the word doesn't invite use of materials not really fitted for construction."

Dow takes much the same view. For that reason, it has kept hands off the Emerson housebuilding project. **END**



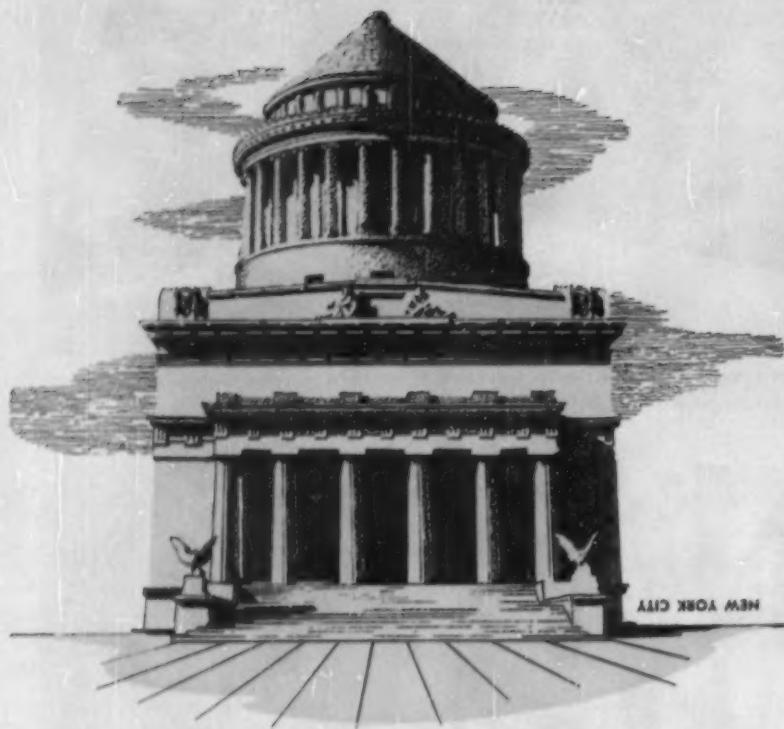
CUTTING Styrofoam to size for wall blocks is one tricky part of operation. Until strengthened with cement and plaster coats, plastic can be deformed easily.



FITTING plastic blocks to make tight-wedged wall, builder jams them in so that joints are staggered and tightly butted, puts waterproofing compound in vertical seams.



FINISHING construction means coating walls with 1 in. of cement stucco on outside, 1 in. of plaster on inside. Cost of a wall: about 85¢ a sq. ft.



Everybody knows where Grant's Tomb is...but

do prospective buyers know where to find the local dealers who sell your products?

There's no better way to bridge the gap between national advertising and the retail sales level than to use national Trade Mark Service in the 'Yellow Pages' of telephone directories. Your trade-mark or your brand name is featured, followed

by a listing of the names, addresses and telephone numbers of all your local outlets.

This service is available in over 44 million directories... or in selected markets. For a 'Yellow Pages' program that suits your needs, get in touch with your Trade Mark Service representative. Simply call your local Bell telephone business office.



Displaying this emblem in your advertising means more sales for your dealers.

You Will Find More Information About Trade Mark Service in Standard Rate and Data (Consumer Edition)



PRODUCTION BRIEFS



Snow-cooled concrete: Engineers building the foundation (above) for Tide Water Associated Oil Co.'s new refinery near San Francisco are using artificial snow to cool the high-strength concrete. Usually, refrigeration pipes are built into a concrete structure to do this job, but it's cheaper to use snow. The foundation will support what Tide Water says is the world's largest fluid coking plant.

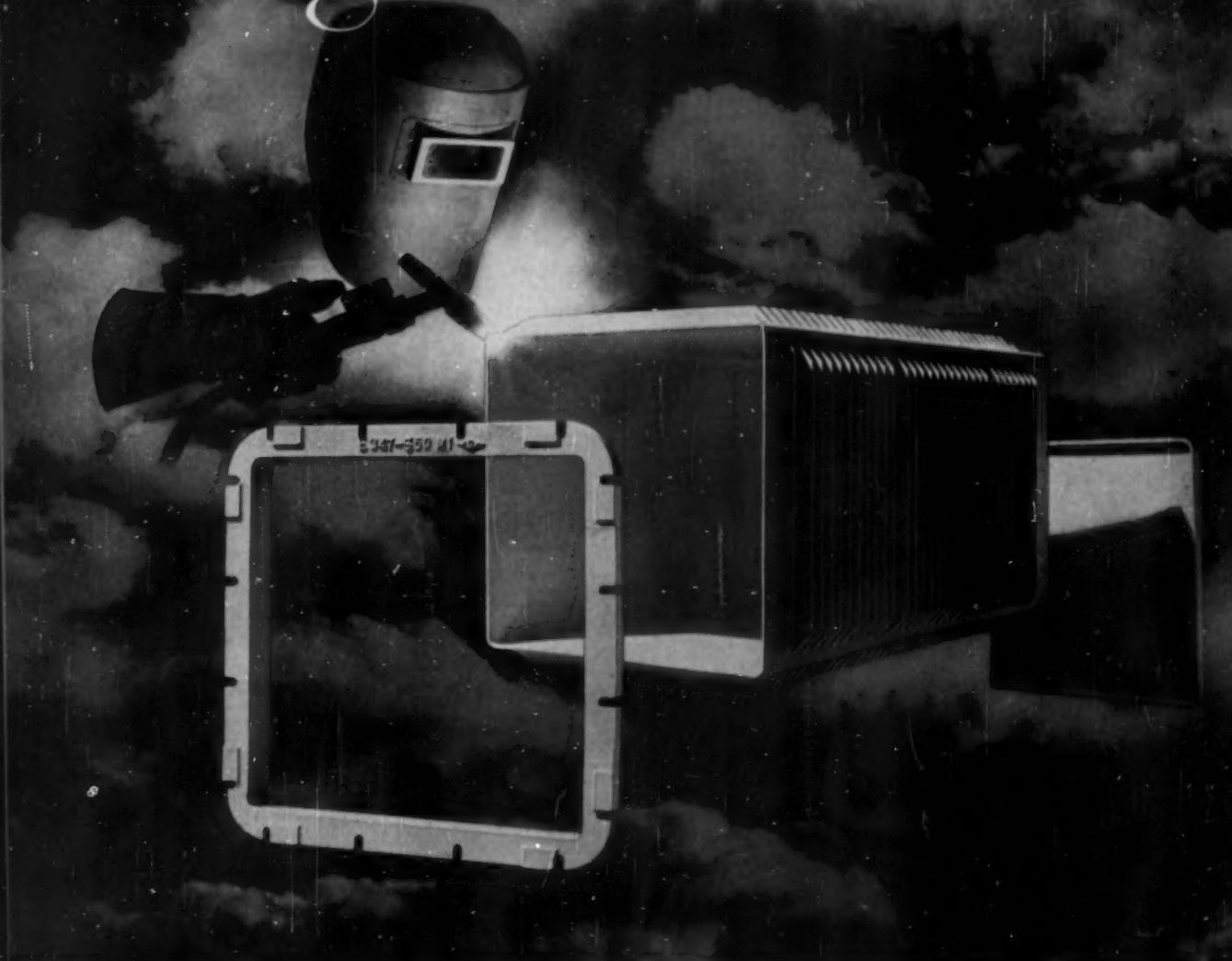
Automation for small business: Paul B. Wishart, president of Minneapolis-Honeywell, said last week that the less-than-1,000 employee companies, not the industrial giants, will provide the big market for automation equipment (BW-Apr. 24 '54, p78). He talks about "standardized automation equipment" for small companies within 10 years.

Two new low-slung trains went on display in Chicago last week. One was the Talgo, shown by ACF Industries on tracks of the Rock Island. The other was the Aerotrain, of GM's Electro-Motive Div. The two trains look quite different: In GM's cars, the passengers ride high, in ACF Talgo, they ride close to the rails.

A technical team-up between North American Aviation, Inc., and Rolls-Royce Ltd. was announced last week. North American will license Rolls to manufacture rocket propulsion systems that have been developed by North American, and the companies will exchange technical information in this field.

New lighter plant: Ronson Corp. is starting construction of a new lighter manufacturing plant in the Delaware Water Gap area of Pennsylvania. The August floods in the area have failed to dampen Ronson's plans.

magnesium



Extruded, Cast, Drawn, Welded and Machined *... it's all magnesium*



Make it with magnesium if it must be *light in weight*. Make it with magnesium if you want *easier fabrication*, too!

In this ballistics control housing the advantages of magnesium are being utilized. Extruded, cast and drawn parts are welded into a composite unit, then machined and painted. This is common practice—magnesium provides these same plus values for many manufacturers who consider it a *typical production metal*.

Start your product on its way to better design—and production—with magnesium. Complete engineering and fabrication facilities are available at Dow's Bay City Division as well as from other fabricators located throughout the country. THE DOW CHEMICAL COMPANY, Magnesium Sales Department MA 305A, Midland, Michigan.

you can depend on DOW MAGNESIUM



54 REASONS WHY ELECTRICITY IS AMERICA'S BEST BARGAIN

During the year of 1954 America's electric utilities broke all records in placing nearly 12 million kilowatts of new, highly-efficient generating capacity on the line. Over 6 million kilowatts of this new capacity are served by Babcock & Wilcox boilers. This is the greatest boiler capacity ever placed in operation during any year by a single boiler manufacturer.

Pictured here and on the following pages are the 54 stations in which one or more B&W boilers were placed in operation in 1954.



Arkansas Power & Light Company
Cog S. Lynch, North Little Rock, Ark.



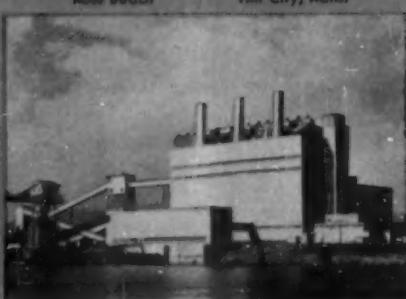
Central Kansas Power Co.
Rose Beach, Hill City, Kans.



Consolidated Edison Co.
Astoria, New York, N.Y.



Detroit Edison Co.
St. Clair, Detroit, Mich.



Duquesne Light Co.
Elrama, Pa.



City of Greenwood, Miss.
City Plant, Greenwood, Miss.



Hartford Electric Light Co.
Middletown, Conn.



Hawaiian Electric Co.
Honolulu Plant, Honolulu, Hawaii.



Iowa Power & Light Co.
Des Moines, Iowa



Iowa Southern Utilizing Co.
Eddyville, Iowa



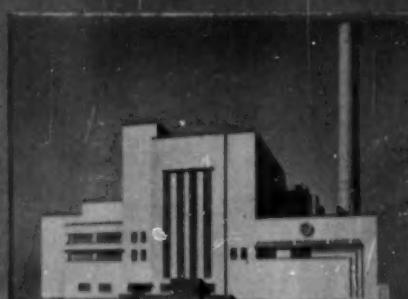
Kentucky Utilities Co.
Green River, So. Corrallton, Ky.



Arkansas Power & Light Company
Harvey Couch
Stamps, Ark.



Atlantic City Electric Company
Deepwater
Deepwater, N. J.



Cambridge Electric Light Co.
Kendall Square
Cambridge, Mass.



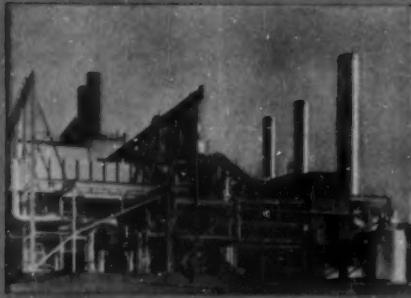
Central Power & Light Co.
Lon C. Hill
Lon Hill, Tex.



Cincinnati Gas & Electric Co.
W. C. Beckjord
New Richmond, Ohio



Commonwealth Edison Co.
Ridgeland
Stickney, Ill.



El Paso Electric Co.
Rio Grande
El Paso, Tex.



Florida Power Corp.
Suwannee River
Eustis, Fla.



Georgia Power Co.
Plant Hammond
Rome, Ga.



Houston Lighting & Power Co.
Webster
Webster, Tex.



Indiana & Michigan Electric Co.
Tanners Creek
Lawrenceburg, Ind.



Iowa Power & Light Co.
Council Bluffs
Council Bluffs, Iowa



Lake Superior District Power Co.
Bay Field
Adlai, Wis.



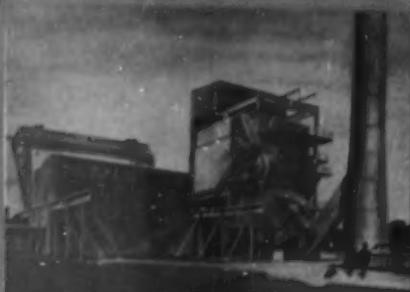
City of Lansing
Mooses Park
Lansing, Mich.



City of Los Angeles
Valley
Los Angeles, Calif.

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Missouri Public Service Co.
Ralph Green Pleasant Hill, Mo.



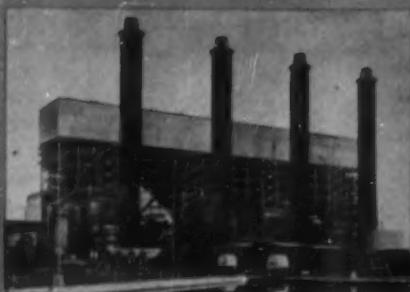
New England Electric System
South Street Providence, R. I.



New Orleans Public Service, Inc.
A. B. Paterson New Orleans, La.



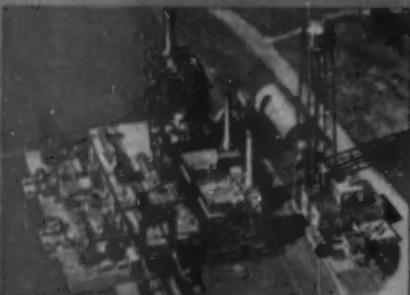
Orlando Utilities Commission
Orlando Orlando, Fla.



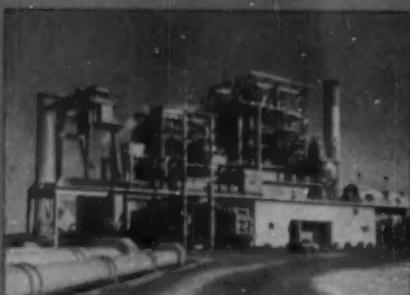
Pacific Gas & Electric Co.
Pittsburg Pittsburg, Calif.



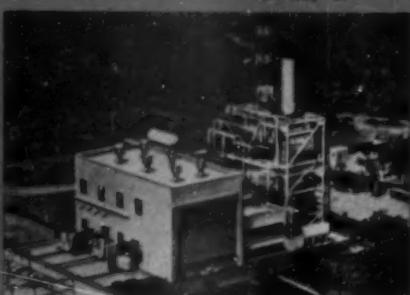
Pennsylvania Electric Co.
Shawville Shawville, Pa.



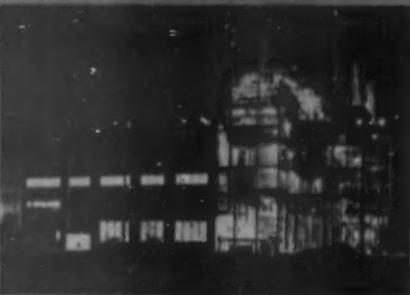
P.S. Co. of Oklahoma
Southwestern Wichita, Okla.



Salt River Power District
Kyrene Tempe, Ariz.



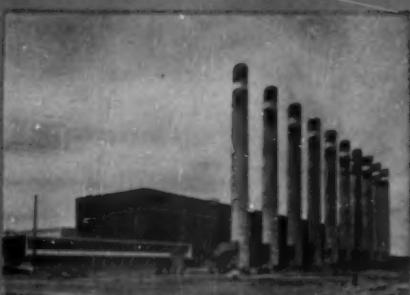
City P.S. Board, San Antonio, Tex.
Northside San Antonio, Tex.



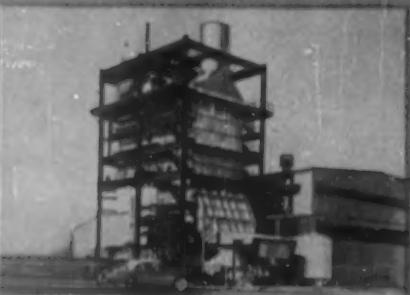
City of Tallahassee
St. Mark's Tallahassee, Fla.



Tennessee Valley Authority
Colbert Tuscumbia, Ala.



Tennessee Valley Authority
Shawnee Childs, Ky.



Tucson Gas, Elec. Light & Power Co.
De Mest Park Tucson, Ariz.



West Penn Power Co.
Springdale Springdale, Pa.



Wisconsin Power & Light Co.
Rock River North Beloit, Wis.



Niagara Mohawk Power Corp.
Huntley Buffalo, N.Y.



Ohio Edison Co.
Niles Niles, Ohio



Ohio Power Company
Muskingum River Beverly, Ohio



Philadelphia Electric Co.
Cromby Phoenixville, Pa.



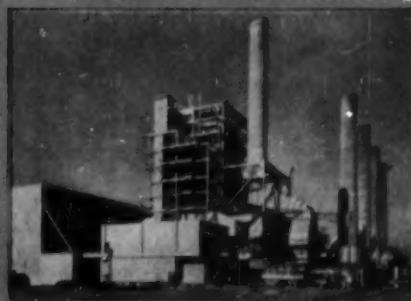
P.S. Co. of Colorado
Zuni Denver, Colo.



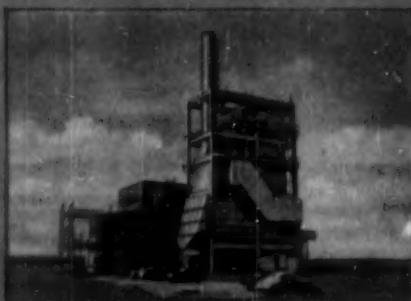
P.S. Co. of New Mexico
Person Albuquerque, N. Mex.



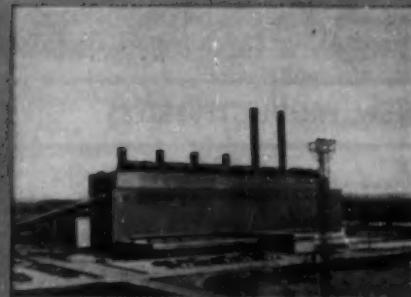
San Diego Gas & Electric Co.
Encina Carlsbad, Calif.



Southern California Edison Co.
Redondo Beach Redondo Beach, Calif.



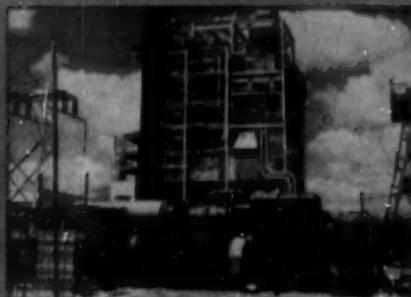
Southwestern Gas & Electric Co.
Long Star Morris County, Tex.



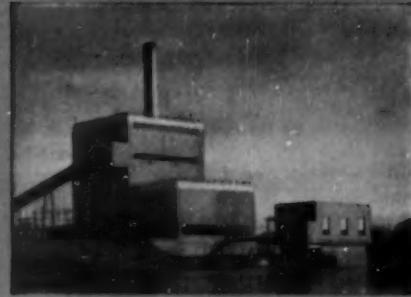
Tennessee Valley Authority
Widow's Creek Ridgeport, Ala.



Utility
Southeastern United States



Texas Power & Light Co.
Big Creek Red River County, Tex.



Wisconsin Public Service Corp.
Weston Rothschild, Wis.

A continuing B&W program of intensive research and development in combustion and steam generation, with the cooperation of the Nation's electric companies, has made possible many major advances resulting in more efficient production of electricity. B&W Units installed during 1954 represent an important part of the contribution toward lower cost power.

**BABCOCK
& WILCOX**



**BOILER
DIVISION**

Fast Money

The device in the picture is pushing dollar bills into a machine that counts them and wraps them together in packets of any set amount. The idea is to save time for the bank teller in his money-counting chore.

The machine was developed by the Macey Mfg. Co., a subsidiary of Harris-Seybold Co., Cleveland. It was shown there for the first time last month.

Banks have always had to do their money-counting manually. Now, with the machine, a bank can count and wrap 36,000 bills an hour. Bank officials who have seen the device at work figure that it gets through its chore at least four times faster than a fast-counting teller.

• **Built-In Checker**—To guard against errors, Macey has built an electronic detector into the machine. If an extra bill slips into a pack—or if the pack is short a bill—the detector automatically stops the machine. Macey says that it operates on used bills as well as it does on crisp new ones. Price for the machine is said to be about \$5,000.

• Source: Harris-Seybold Co., 4510 E. 71st St., Cleveland 5, Ohio.

matter. On weathered aluminum, the surface should be washed with a phosphoric acid solution.

• Sources: Eastman Chemical Products, Inc., 260 Madison Ave., New York 16.

Egyptian Lacquer Mfg. Co., Rockefeller Center, New York 20.

Fast Heater

A new furnace for the continuous melting of aluminum alloys was announced this week by the Selas Corp. of America. The Monarch Aluminum Mfg. Co., Cleveland, its co-developer, is now using three of the furnaces in its casting operations.

Selas claims that this new idea will bring a radical change in the casting of aluminum alloys. For example, the company says that a start-up charge can be brought to pouring temperature in less than three hours, where a conventional furnace takes about 22 hours. Selas says that fuel costs are lower: Performance records at Monarch show an over-all gas consumption of 1.9 cu. ft. per lb. of aluminum melted, against 3 cu. ft. per lb. in the most efficient conventional furnace.

• **Less Heat**—Conventional batch furnaces throw off a lot of heat—a particularly troublesome condition in hot weather. Selas says that a worker can stand alongside its furnace indefinitely without discomfort.

Selas says that it can build furnaces to produce from 300 lb. to 3,000 lb. of molten metal per hour. Monarch's are in the 1,500 lb. to 3,000 lb. per hour range.

• Source: Selas Corp. of America, Erie Ave. & D. St., Philadelphia 34, Pa.

Fast Spray

The aluminum trailer in the picture is soaking up a clear, water-white, lacquer coating that will protect its surface against corrosion and pitting. The lacquer is a joint development of Eastman Chemical Products, Inc., and Egyptian Lacquer Mfg. Co.

The companies said this week that the lacquer has been under test for the past 16 months. In one test, conducted with two trailers of the Mason & Dixon Lines, Inc., one trailer was sprayed with the coating, the other was not. After 10,000 miles, according to the developers, the uncoated trailer began to show the first signs of deterioration, but the aluminum on the lacquered trailer was still bright.

• **Easy Washing**—As for maintenance, the companies say that it took one-third less time to wash down the lacquer-coated trailer after the 10,000-mi. run. Mason & Dixon says that the uncoated trailer will probably have to be treated with a corrosion-remover and brightening agent every three months. As it appears now, the protected trailer will never require such treatment.

Ordinary spray equipment can be used to apply the lacquer. It dries in about 10 min. at room temperature. No priming coat is required on new aluminum, though a solvent wash is necessary—to remove grease wax, or foreign

NEW PRODUCTS BRIEFS

Three new safety razors will be introduced by Gillette next week. You pick the one that fits your beard: light, for sensitive-skinned teenagers; regular, for most skins; and heavy, for men who like a hefty razor.

Cheapest transistor yet: General Electric Co. says it's ready to retail a transistor for under \$2. The unit carries a one-year guarantee.

The fire alarm box may become out of date: Bell Telephone Labs has developed a telephone box that does the same job. With the new system, the firemen can talk directly with whoever places the alarm. Five cities have approved it already. Omaha may have it in operation this month.

The Fruit of Freedom

Labor Day, 1955

You can sense the symphony of American production throughout the land — the gentle hiss of a Bunsen burner in a lab . . . the rumble of a factory and the roar of a blast furnace . . . the snarl of a sawmill and the whine of a dynamo . . . the trap-drumming of riveting guns, and the never-ending click of steel wheels on steel rails.

You can see the American people — more millions than ever before, living better than any other peoples at any other time . . . better fed, better clothed, better educated, healthier . . . owning more homes and more luxuries . . . possessing more insurance, more pensions, more security . . . enjoying better working conditions and more leisure time.

All this is the fruit of freedom. It blooms only in the climate of free enterprise. It ripens only in the economic sunshine of competent, loyal workers and intelligent, foresighted management working together as a team. And it is harvested by more than 165 million men, women and children who live immeasurably better because of it.

When the rewards are so great, so tangible — can any American fail in his devotion to the principles of free enterprise and the completeness of liberty in the land?

"It is inherent in our system, under which freedom of competition makes monopolies well-nigh impossible, that greater productivity in selling things must go hand-in-hand with greater productivity in making things, and that as ownership shares the fruits of higher productivity among its customers and its employees, as well as itself, the purchasing power of all three groups is improved, and the standard of living of the total population rises in the process". —W. L. McGrath, United States Employer Delegate to 1954 International Labor Conference.



Norfolk and Western Railway

In Marketing

Chrysler Makes It Official: Separate Dealers for Plymouth

This week Chrysler Corp. finally took a step that it has contemplated for some time (BW—Nov. 27 '54, p42).

It announced plans for the gradual development of separate dealerships for Plymouth.

The Plymouth distribution setup has been an anomaly in the auto industry. Unlike other makers, Plymouth has never franchised its own dealers. Dealers for other Chrysler makes—Dodge, De Soto, and Chrysler—handle Plymouths on a dual basis. By and large, the dual dealership idea has petered out in the auto industry, except in towns where volume won't support several dealers.

The Plymouth situation has long been a source of irritation to dealers. Where other makes have one dealer apiece in a town, Plymouth may be sold through three dealers. Chrysler Corp. dealers grumble that, in effect, they have to compete with each other to sell Plymouths. In all, there are some 10,500 Plymouth dealers in the U. S., compared with 7,500 for Chevrolet.

Chrysler Corp. has been thinking about changing the dual setup for years, but something has always intervened. During the depression, the low-price, high-volume Plymouth kept other Chrysler Corp. dealers in business. Then came the war. The time for a change, Chrysler people agree, would have been just after the war, but the company missed its timing. And then came the big sales slump of a couple of years ago.

For the past year and a half, the company has laid the basis for the change by gradually building up a completely separate sales staff and organization for Plymouth—field wholesaling organization, service department, advertising and merchandising staffs, etc.

Now the big question is: Who will get the new Plymouth franchises? So far the company will give no indication. It says no franchises have been signed yet.

Supermarkets' Sale of Motor Oil Stirs Fuss in New Orleans Area

Supermarkets, which have moved into a wide range of nonfood items from cosmetics to housewares, are kicking up a fuss in still a new field. In the New Orleans area they are retailing motor oil at cut prices, with a resulting ruckus among gas station operators.

Some 50 supers—including Schwemann's, the local price-cutting chain that made its fame by carrying the original Miller-Tydings federal price maintenance amendment to the Supreme Court—are selling considerable quantities of branded motor oils. The names include Texaco, Gulf, Esso, and Shell.

"So far," comments Petroleum Week, a McGraw-Hill publication, "the big stumbling block has been the

cry of unfair competition from the majors' service stations." It quotes a New Orleans dealer as saying:

"The supermarkets sell oil for less than I can buy it. I buy 100 cases at a time. My cost for the 5-qt. can, including tax, is \$1.36. Cost for the 1-qt. can is 28.3¢. But the supermarkets sell the 5-qt. can for \$1.25 and the 1-qt. for 27¢, including tax."

The big oil companies are watching the situation with considerable interest. Notes Petroleum Week:

"They have watched the success of Macmillan Petroleum Corp.'s campaign to sell its heavy-duty 'Royal Scot' oil through markets in Southern California, Arizona, and Hawaii. They realize that the 7% of U. S. motorists who fill their own crankcases are natural customers for supermarket oil sales. And they see that they could take an extra ride on their own national advertising of motor oil by providing new sales outlets."

But there are the regular dealers to consider.

The majors' policy in this regard varies. At least one company—Texas Co.—admits selling to supers. But for the most part, oil companies disclaim any knowledge of how supplies find their way into the hands of the supermarket operators.

Service station people, who are bitter about the loss of business to the supers and who are getting no competitive price discounts on their oil from jobbers, are naturally bitter. Hence, New Orleans may prove a laboratory test case to show whether there is enough plus business in supermarket sales to make it worthwhile for the oil companies to antagonize their established dealers.

Variety Chains Have Tough Time In Race for Consumer's Dollar

Variety store chains still are having a tough time holding on to their share of total retail sales.

Last year they managed to show a mere 1.1% increase in over-all sales. And once again, as during the whole period since the beginning of World War II, they were unable to keep pace with the increase in the nation's disposable personal income. Furthermore, what small gain the variety chains did make was attributable chiefly to the opening of new retail units.

This is one of the main gleanings from the 24th annual report on Operating Results of Limited Price Variety Chains, the 1954 edition of which was released last week by the Harvard Business School (\$2 a copy). The current report covers 50 concerns with 6,410 stores and over-all volume of \$2.4-billion (about 86% of the total sales of all variety stores).

Gross margin for the 50 chains, though it slipped a fraction from the year before, stood at 37.5%, which is near the record high.

But earnings dipped again. Net profit was 4.6% for 1954 as against 5.5% for the previous year. This is the lowest it has been since the 1930s, and it would have gone lower if the tax load had not eased.

In general, variety chains, along with the rest of retailing, seem to be doing better this year, with gains of about 7% in sales for the first half over a similar period a year ago. Profit margins are also better.



STEINBERG

"Personally, I
always specify
Lewin-Mathes
Copper Tube"

We welcome stiff-necked specifications.

We meet them . . . because the copper we form into tube is first *refined by us* in our own plant.

We meet them . . . because Lewin-Mathes' *completely integrated operation* permits a standard of quality control—from raw material to packaged tube—that is unsurpassed anywhere in the industry.

As refiners, we know the copper going into Lewin-Mathes Tube is pure. As fabricators, we painstakingly control every physical and chemical property of the finished product. And as *integrated specialists*, we take pride in delivering every foot of Lewin-Mathes Copper Tube uniform and perfect . . . to meet your most exacting requirements.

Nothing primitive about Lewin-Mathes supply facilities. Our products are available through Wholesale Distributors, serviced by Lewin-Mathes Mill Depots throughout 48 states.

LEWIN MATHES
SAINT LOUIS, MISSOURI
MANUFACTURERS OF
COPPER AND BRASS TUBE, PIPE, ROD AND FITTINGS

Fast Grab at a Big Market

Fiberglas* Screening

Mesh: 18 x 14

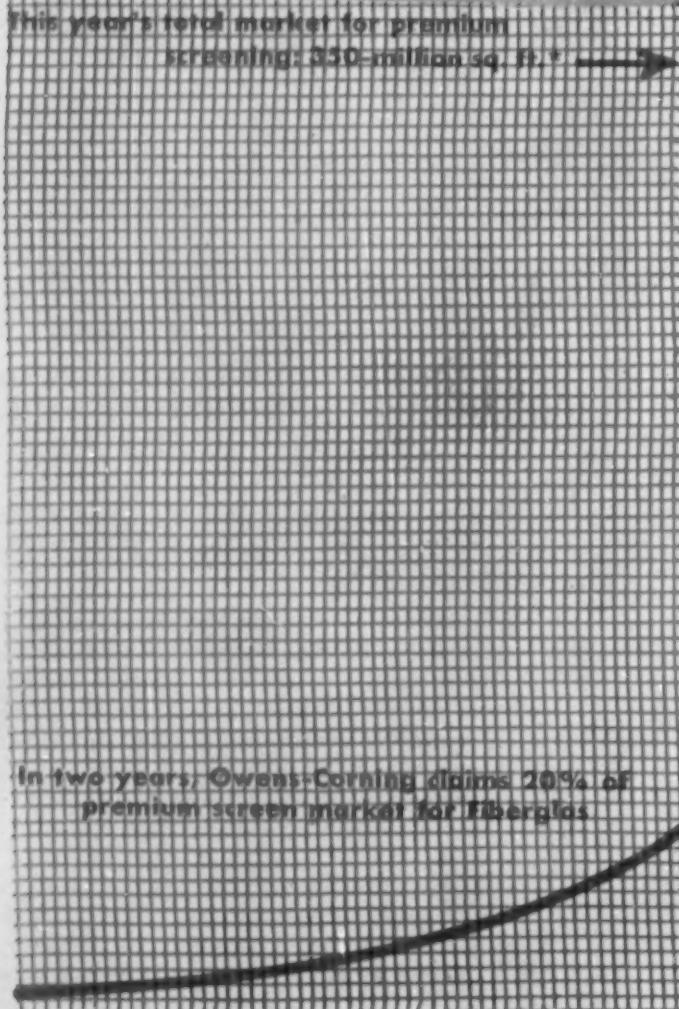
Colors: Forest Green

Aluminum Grey

Antique Bronze

For names of manufacturers or descriptive literature write to Owens-Corning Fiberglas Corporation, Industrial Sales Div., 398 Madison Ave., New York, N. Y.

*TM Reg. U.S. Pat. Off.

This year's total market for premium screening: 350-million sq. ft. 

In two years, Owens-Corning claims 20% of premium screen market for Fiberglas.

*Data: Owens-Corning Fiberglas Corp. estimates based on Commerce Dept. and industry reports.

©BUSINESS WEEK

Up to a few years ago, a householder trying to decide what insect screening to put on his windows and doors really didn't have much of a choice. If he wanted the best, and was willing to pay for it, he could choose bronze screening. If he wanted to save money and didn't mind the bother of frequent paintings, he could buy galvanized screens.

Since the war, the screen market along with many other markets has broadened considerably. Both plastic and aluminum have moved in on a major scale. Most recently has come still another entrant—glass fiber screens.

All of these types are now vying for an over-all market that runs somewhere between \$40-million and \$50-million a year at the manufacturer level, according to trade estimates, and is still growing rapidly thanks to the continued fast pace of construction and to the growth of the home fix-up and rebuilding market.

• Challenger—The big new challenger to the field is Owens-Corning Fiberglas Corp., which entered the market a bare two years ago with its Fiberglas screening, composed of woven glass fibers covered with a vinyl coating. In that short period, says Owens-Corning, it has garnered no less than 20% of the premium screening market (chart, left), or about 10% of the entire market. Further, Owens-Corning claims that it accounts for at least 95% of all the glass fiber screening sold.

This achievement is of a high order, considering the nature of the field. Owens-Corning has done it largely through the introduction of a famous brand name in a field that is largely nameless. A few names—Saran in plastic screening, Reynolds in aluminum screening—have made a mark. But for the most part, screening is a commodity kept by hardware stores or other retail outlets in unbranded rolls and cut off in pieces of the customer's choosing.

To understand Owens-Corning's strategy, it is helpful to take a look at the competitive situation in the field.

I. How They Line Up

Lower-priced screening still accounts for about half the total market—with the bulk of this going to galvanized, still the biggest seller among all types of screening. Galvanized will hang on to an estimated 300-million sq. ft. this year, about 85% of low-priced screening and a little better than 40% of the entire market. Its big appeal is price—8¢ or 9¢ a sq. ft. at retail.

It is losing out slowly to other types,

particularly to aluminum. However, it continues to make a strong showing despite the fact that in today's upgraded markets consumers are willing to pay a premium for convenience, for quality, and for doing away with maintenance and other bothers. The trade attributes some of galvanized's strength in the market to the fact that rentals still account for about half the nation's housing units and that people are not particularly interested in the long-range view—particularly at a price—when the property isn't theirs.

Saran, developed by Dow Chemical Co. during the war as a substitute material for metal screening, is also competing for the lower-priced market. It retails for about 10¢ a sq. ft. Its sales volume this year will total under 50-million sq. ft., according to the trade its share of the market is declining.

• **Premium Growth**—The higher-priced market is the growing area. Bronze, which will account for about 30% of this market, is no longer the leader. Its popularity stemmed from its rich golden color and its relative weather resistance. But it suffers from a couple of disadvantages: It is costly—15¢ to 18¢ a sq. ft. at retail—and it will stain in time.

Aluminum is the fairhaired entry of the two dozen or so manufacturers of metal screen products. It's cheaper than bronze (14¢ or 15¢ a sq. ft. at retail), and has durability, lightness, and relative weather resistance. It has already taken over slightly more than half the higher-priced screening market.

II. Owens-Corning Moves In

The newcomer—Fiberglas—fits nicely into this competitive price picture. Owens-Corning recently reduced the price so that now it retails for roughly the same as aluminum—about 14¢ a sq. ft.

The competition in the industry has

1955 Insect Screen Market (millions of square feet)

Premium Screens

Aluminum . . .	200	(still gaining)
Bronze . . .	85	(on the decline)
Fiberglas . . .	65	(coming up fast)
TOTAL . . .	350	

Low-cost Screens

Galvanized . . .	300	(but losing ground to aluminum and Fiberglas)
Saran plastic . . .	50	(dropping off since World War II)
TOTAL . . .	350	

Data: Owens-Corning Fiberglas Corp., estimates based on Commerce Dept. and industry reports.

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Facing facts about your fat may not be fun . . . but, better now than in a hospital! For fat is dangerous. Overweight often shortens life. *What's the answer?*

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It's better business to buy Chevrolet Trucks! Your hauling costs go down to stay with today's

Your ton-mile hauling costs hit bottom! Your outlay for upkeep shrinks way down!

That's what happens when you put today's most modern trucks to work on your job. For new Chevrolet Task-Force trucks were built to slash your overhead to the bare bone. Everything in these handsome huskies was engineered with an eye to lower maintenance requirements and higher operating economy.

Frames are more rigid and rugged in every

model, with full-length parallel side members. Cabs are not only more comfortable, but more durable as well. And so it goes all down the line.

In the engine department, Chevrolet Task-Force trucks bring you the most modern power for any job. The new L.C.F. (Low Cab Forward) is powered by the shortest stroke V8 in *any* leading truck! And you have your choice of this ultra-efficient type of V8* or a new and advanced 6 in other new Task-Force trucks. *All* new Chevrolet truck engines

NEW CHEVROLET *Task-Force*



most modern trucks!

have a modern 12-volt electrical system for quicker starting and better ignition.

With a new Chevrolet Task-Force truck, you can count on saving money from here on out. The same modern features that cut your costs today will bring you an extra bonus when trade-in time rolls around. See your Chevrolet dealer for the lowdown on the trucks that'll bring your costs down—for good! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

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NEW OVERDRIVE*
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NEW CABS

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STANDARD-WIDTH
FRAMES**

*V8 standard on L.C.F., extra-cost option
on all other models except Forward-Control.
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Kalamazoo, Michigan

Canada Fans, Ltd., Montreal, Canada

**"... screen weavers help
Owens-Corning give Fiberglas
screening brand-name
identity . . ."**

FIBERGLAS starts on p. 56

led to a lusty battle of claims and counter-claims.

Owens-Corning says its screening is the lightest, strongest, and most weather resistant screening on the market. The vinyl plastic prevents the glass threads from cutting each other in contact. The screening won't rust, corrode, crease, or crack. It snaps back into shape when bent and can be drawn extremely taut. The vinyl helps when patching is needed; you can seal separate pieces of screening together with a hot iron.

The new screening actually dates back, like Saran, to a time (1949) when the military was hunting for a substitute for metal. The leading glass fiber makers, who had been experimenting with uses for woven glass yarn as early as the 1930s, were approached—Owens-Corning, Libby-Owens-Ford's L-O-F Glass Fibers Co., and Pittsburgh Plate Glass Co.

Owens-Corning is the only one so far to capitalize on the idea. The other two major manufacturers have held back, possibly to see how Owens-Corning makes out. However, L-O-F does supply some yarn to a distributor in Miami—Federal Screen Supply Co.—which has it vinyl coated by a chemical company and then sells it to builders and retailers. Pittsburgh Plate Glass is now experimenting with supplying coated yarn to a distributor. Both companies say they are studying the field.

• **Side Effects**—Owens-Corning's emergence in the field has brought about an interesting situation: It has strengthened the position of textile mills, which got into the manufacture of screening through Saran. Wire screen makers can make glass fiber screens, but they suffer a disadvantage. Metal looms are much slower for this work than fabric looms.

Here Owens-Corning took a lesson from Saran's history. Textile mills saw the plastic screening as grist for their under-used looms during the war. But track sources feel too many jumped into the business without proper distribution channels. When orders from both military and civilian customers fell off after the war, the market was glutted with Saran screening. Now there are only two weavers turning it out.

Owens-Corning supplies its yarn to these two—Chicopee Mills, Inc., and

Plastic Woven Products, Inc. It also supplies two other manufacturers—Soule Mills and Lockset Screening Co., Inc.

• **Brand Promotion**—These screen weavers help Owens-Corning give the product brand-name identity. Each of the four mills sells the screening under a combined trademark—Chicopee Fiberglas, Soule Fiberglas, Life-Time Fiberglas (Plastic Woven Products), and Airlite Fiberglas (Lockset).

To further identify the product at point of sale, Owens-Corning has taken a cue from Reynolds Metals, Inc., whose brand-name promotion of aluminum for the do-it-yourself market in retail outlets has been one of the most masterful jobs in postwar marketing. Owens-Corning has developed special display racks for Fiberglas screening; this in turn helps to merchandise on behalf of the weavers. A customer of the company has also developed its own do-it-yourself kits, which include aluminum frames.

Owens-Corning has also put a considerable sum of money—for the screening business—behind advertising. It has a million-dollar budget for campaigns in Life and Better Homes & Gardens. It also has advertised on National Broadcasting Co.'s Tonight TV show, starring Steven Allen.

In reality, the company figures, the sale of screening to homeowners themselves only accounts for about 30% of all screening sold. The other 70% is sold to the building trade or to fabricators of ready-made screens. But the consumer campaign is highly important to Owens-Corning.

Builders and manufacturers complain that their customers don't ask for Fiberglas, so it's the company's job to correct this by stimulating public demand.

• **Next**—Once the market is built up, it's even bet that the next logical step for Owens-Corning will be to reduce the price again (it has already cut several times). The closer Fiberglas screening gets to the break-even price between premium and lower-priced screening—the trade figures this to be 10¢ a sq. ft.—the bigger the market will be, particularly if the other glass fiber makers get in and push things along, too.

There's another interesting change Fiberglas may bring to drab screening: color and styling. Fiberglas screens now come in three colors—Aluminum Grey, Forest Green, and Antique Bronze—made possible by the vinyl coating that can be dyed almost any color.

Owens-Corning sees the day when people may match their screen colors to their homes. In fact, an architect in Miami, who has a house by the sea, has blue Fiberglas screens to match the ocean. **END**



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MARKETING BRIEFS

Another car maker will stress safety in the 1956 models. The latest is General Motors, which tried out a new "Safe-guard" door latch in the spring and will now install it on all GM passenger cars. GM says that the device prevents car doors from opening even under severe impact.

Magazine advertising rates are on the rise. The latest publications to increase are (1) Coronet, which upped the rates 5%, with no increase in guaranteed circulation, and (2) McCall's, which is raising them 7%, on an increase from 4.4-million to 4.5-million guaranteed circulation.

Alfred A. Knopf has added a new twist to book publishing that defies the usual rules of pricing. Knopf's latest novel, *The Picnic at Sakkara*, by P. H. Newby, is in a paper-backed edition retailing for \$1.25. If this takes hold, Knopf will put it in hard covers and sell it for about \$3. Usually a publisher gets all he can out of the hard-cover edition before going into paperbacks. Knopf says it wants to see if launching the book as a paperback will spark demand for an author whose previous three novels have had little success—"except critically."

Blatz Brewing Co. has a new premium-priced beer called Tempo. It is made from fresh instead of dried hops—the usual ingredient of beer. The brewer says the switch produces a milder and less bitter beer.

Canada Dry is going into the whiskey business. This month the soft drink maker will start selling a Canada Dry bonded bourbon, straight bourbon, and blend of bourbons. The company has a long-term lease on a Kentucky distillery.

No sooner had Farm Journal bought Better Farming from Curtis Publishing Co. (BW-Jun.18'55,p129) than FTC slapped a monopoly complaint at Farm Journal, Inc. The grounds: that the company had 51% of the net paid circulation of the six major competitors in the field. Farm Journal now replies that you get a different figure by paring off (1) duplicate subscribers to the two merged publications and (2) nonfarm subscribers to Better Farming, who will presumably subscribe to a sister publication called Town Journal. Figured this way, Farm Journal, Inc., has only about 25% of the circulation of farm journals with 1-million or more circulation.

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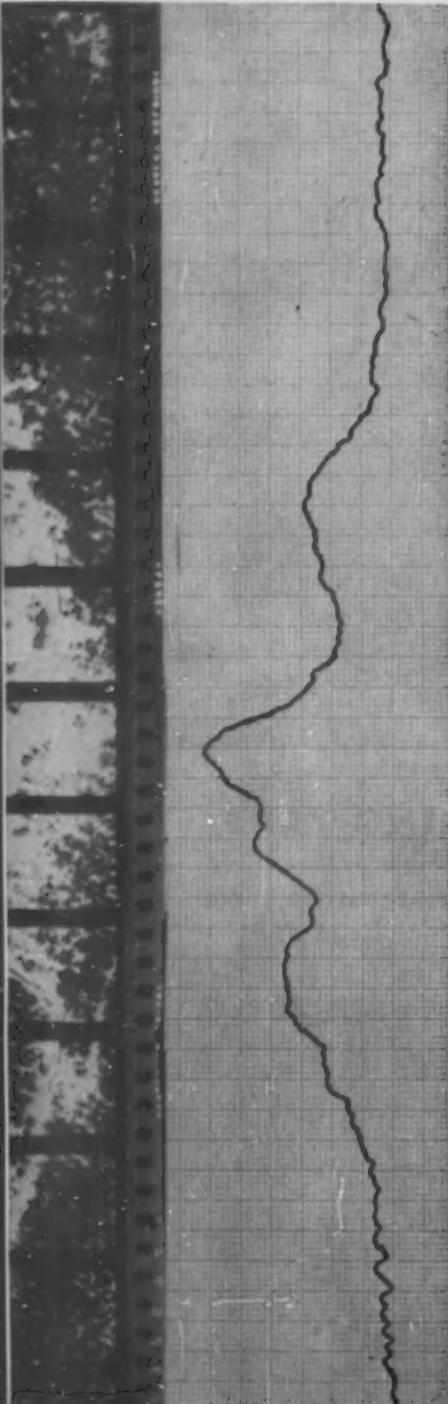
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BIG BUMPS on the recording graph of the aerial electromagnetometer often mean large subsurface mineral deposits. The synchronized photographs help locate their exact positions.



LOADING the bird under the belly of the Canso amphibian it is towed several hundred feet behind the plane on a steel cable.

The familiar sight of prospectors busy with their pickaxes is disappearing as geologists move in with scientific tools. Now a new step enables much of the primary exploration work to be done from a plane, as . . .

Airborne Detectors Hunt Ores in Canada

Cattle grazed serenely, farmers rode their tractors undisturbed, and people in motorboats waved gaily this week at a twin-engine amphibian plane flying low back and forth over the lake-dotted bush and farm country of central Ontario.

What these Canadians didn't know—and couldn't guess from the yellow missile-like "bird" towed behind (picture)—was that this plane was adding a new dimension to the rapidly growing field of aerial geophysics. In the plane was a party of modern prospectors, with a ton of the latest equipment for striking it rich.

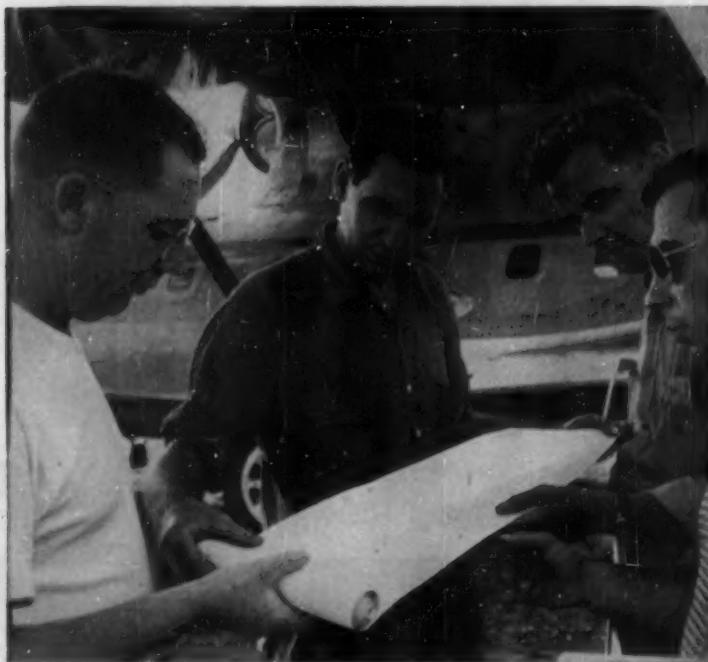
• **Three Gadgets**—One of three instruments aboard was the airborne magnetometer, developed during the war

to detect enemy submarines. It searches out large mineral deposits by recording the deviations they produce in the earth's magnetic field. In the last few years it has been used successfully to hunt for oil, iron ore, nickel, and asbestos (BW—Feb. 20 '54, p102). Another instrument, the airborne scintillometer, determines radioactivity levels, and was introduced to speed up the search for uranium.

Now the mining industry is taking a fancy to a third instrument—the aerial electromagnetometer—which can pinpoint the mineral deposits that show up on the magnetometer and is also sensitive enough to detect sulfide ore bodies that contain copper, lead, and zinc. This instrument sets up a large



RECORDING of instrument readings is done automatically and continuously while the plane makes a run over a predetermined area.



EVALUATION begins as soon as the plane is on the ground. The first step is usually a meeting between the geologists (left) and the pilot and navigator.

REPORTING must be done quickly and quietly. The nightly phone call may bring men out the next morning to stake claims. Secrecy is essential at every step.

Glass turns salesman

-as photography speeds bottle design

Owens-Illinois Glass Company creates more than 3000 new bottle designs a year—uses photography to save time and cost in engineering them

Behind the sales-making lines of a handsome bottle lies more than just fine design. There's a wealth of engineering as well.

Much of this engineering is basic to whole groups of bottles. And this is where Owens-Illinois puts photography to work handling time-consuming chores in the drafting rooms.

Instead of redrafting recurring essentials, these elements are reproduced photographically from Kodalith Film prints kept on file. Then the new details are added and the finished working drawing produced. This saves hours of drafting time.

Reproducing engineering drawings is just one contribution photography makes to business efficiency. It microfilms valuable plans and specifications for safe storage. It examines new products with high-speed movies or x-ray photographs. It works for large businesses and small, speeding production, controlling quality, saving time and money.

Photography can work for you, too. Check the list and see how.

Eastman Kodak Company, Rochester 4, N. Y.



... and here are 16 basic places where Photography can work for you

—5 minutes with this check list can be the soundest business move you've made this year

- Management**—Progress Photos, Stockholder reports, Record preservation, Information distribution, Control and Organization charts
- Administration**—File debulking, Purchase schedule, Office layout, Interior decoration, Form printing
- Public Relations**—News release, Institutional, Community relations, Public service
- Personnel**—Identification photos, Job description, Orientation, Payroll records, Employee personal records, House organs, Health records, Bulletins
- Training and Safety**—Safety campaigns, Teaching, Reports, Fire prevention
- Engineering**—Drawings, Specification sheets, Drawing protection, Pilot radiography
- Research**—Reports, Flow studies, Process charts, Library, Photomicrography, electron-micrography, x-ray diffraction, etc.
- Product Design & Development**—Styling, Consumer testing, Motion studies, Stress analysis, Performance studies
- Advertising**—Advertisements, Booklets, Displays, Dealer promotion, Television
- Plant Engineering & Maintenance**—Plant layout, Repair proposals, Piping & Wiring installations, Progressive maintenance, Record debulking
- Production**—Time study, Work methods, Legible drawings, Schedules, Process records
- Testing & Quality Control**—Test set-ups, Reports, Standards library, Radiography, Instrument recording
- Warehousing & Distribution**—Inventory control, Damage records, Waybill duplicates, Flow layouts, Packing & loading records
- Purchasing**—Schedules, Duplicate engineering prints, Specifications, Component selection, Source information
- Sales**—Portfolios, Dealer helps, Sales talks, Price & delivery information
- Service**—Manuals, Parts lists, Installation photos, Training helps, Records



These books show how photography is being used today.

Photography in Marketing

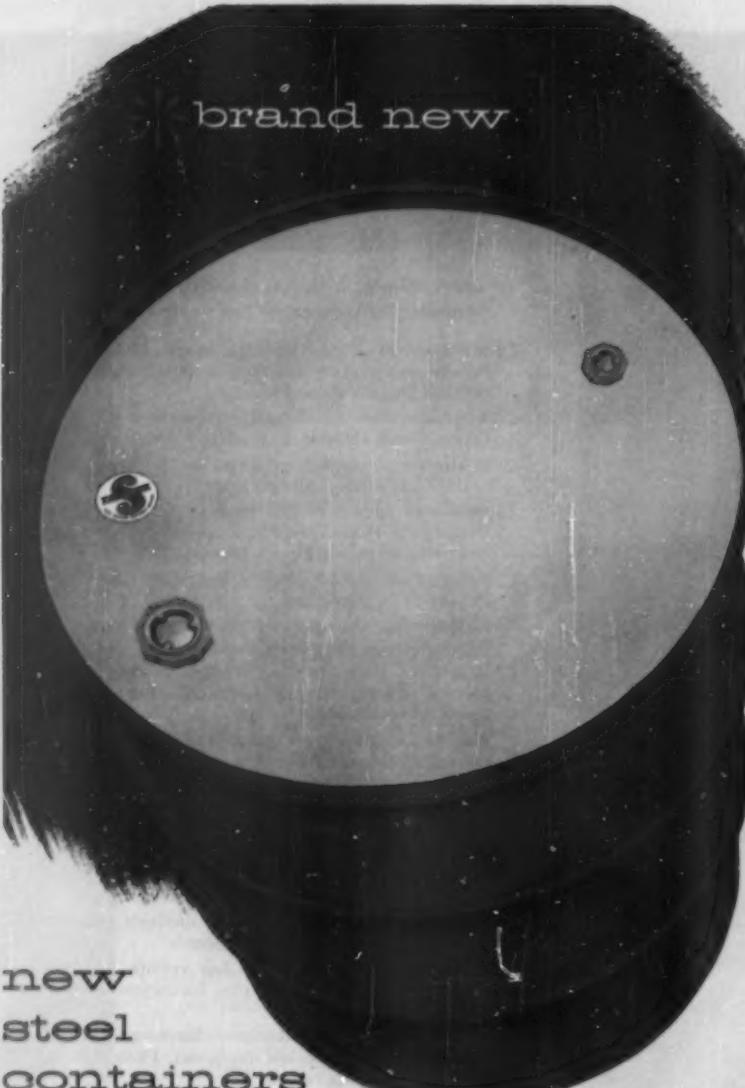
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Photography in Engineering

Photography in Plant Operation

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Whether you're selling an established brand name or marketing a relatively new product, you can really get the jump on competition by shipping in new steel shipping containers. New steel containers decorated with your trade mark and bearing the "Red-S" label of the Steel Shipping Container Institute, will create brand preferences . . . build the kind of customer

goodwill that brings in repeat orders. They not only add sales appeal to products but they afford maximum protection . . . guard against losses due to leakage and product contamination.

New steel containers are made to meet the Recommended Universal Specifications of leading consuming industries and to conform to Bureau of Explosives and Interstate Commerce Commission regulations.



"It's Better to Ship in Steel"

STEEL SHIPPING CONTAINER INSTITUTE

600 Fifth Avenue, New York 20, N.Y.

". . . the only independent contracting outfit that can fly all three surveys simultaneously . . ."

AIRBORNE starts on p. 64

magnetic field, by sending an electric current through a wire coil built around the plane. Then it measures the distortions induced in this field by electrical conductors in the earth.

• **Practical Uses**—Two types of airborne EM, as the instrument is called, are used commercially. One, developed by International Nickel Co., was used to discover American Metal Co., Ltd.'s huge nonferrous metal ore body in New Brunswick (BW—Nov. 13 '54, p148); Inco has a 25% share in the find. The other, developed by the Geological Survey of Finland, is being used by Aeromagnetic Surveys, Ltd., of Toronto, which acquired patent rights after doing some research of its own.

With two Canso amphibians, Aeromagnetic Surveys says it's the only independent contracting outfit in the world that can fly all three surveys simultaneously. So far it has flown for almost all the top United States steel and nonferrous metals companies. It will soon send men into the U.S. to interest others—and to cash in on the demand for ores such as copper.

Half of Aeromagnetic Surveys, Ltd., is owned by Hunting Associates, Ltd., the Canadian holding company of the Hunting Group in England (oil tankers and production, aerial transport and surveys, etc.) The other 50% is divided among the company president, J. R. Hughes, a Canadian investment banker; Dr. R. F. Beers, an American consultant in geology and geophysics, and the Geotechnical Corp. of Dallas.

• **Survey Costs**—This week the company was finishing up a job in Ontario—the exact area can't be disclosed—for Technical Mine Consultants, the Toronto concern that manages the mining ventures of uranium titan Joseph H. Hirshhorn (BW—Feb. 5 '55, p66).

Technical Mine Consultants is bringing one large uranium mine into production next month and two more next year in Ontario's Blind River area. It wanted to plug up some of the gaps in its aerial scintillometer search for uranium and also to explore for other metals and minerals. So it decided to contract with Aeromagnetic Surveys for a magnetometer and EM search as well as rounding out its scintillometer records. A scintillometer survey alone would cost about \$4 a line mile. The EM alone would cost \$10. For flying with all three instruments, Aeromagnetic charges \$15 a line mile.

• **Top Secret**—Manned by a crew of seven (two pilots, two engineers, a navigator, and two technicians) the plane flew to a base on Manitoulin Island, at the northern edge of Lake Huron. John B. McClusky, Aeromagnetic's sales manager and a geologist, also went to the base. There, the party was met by Dr. E. L. Evans, field manager for Technical Mine Consultants in the Blind River area.

Every morning the plane took off with only the pilots and navigator having an idea where they were going. Every evening it returned with no crew member knowing what, if anything, had been found. Only McClusky knew where the plane was at any particular time and what the instruments were recording there. The others, at most, knew where the plane was or how the instruments were reacting—but not both.

• **How It's Done**—Soon after takeoff, an engineer lets loose the yellow "bird" (pictures) to trail out behind the plane at the end of a cable. The technicians turn on their instruments. The navigator, lying on his stomach in the nose of the plane, takes command. He follows a map on which precise flight lines have been drawn.

These are the result of briefing conferences between Technical Mine and the Aeromagnetic staff.

The navigator guides the pilot down a path about 10 miles long. At the end of each pass, he tells the pilot to turn, and the plane heads back about one-fifth of a mile to the right or left of the last pass. The usual flight is about 400 ft. or 500 ft. above the ground and air turbulence can make it quite uncomfortable.

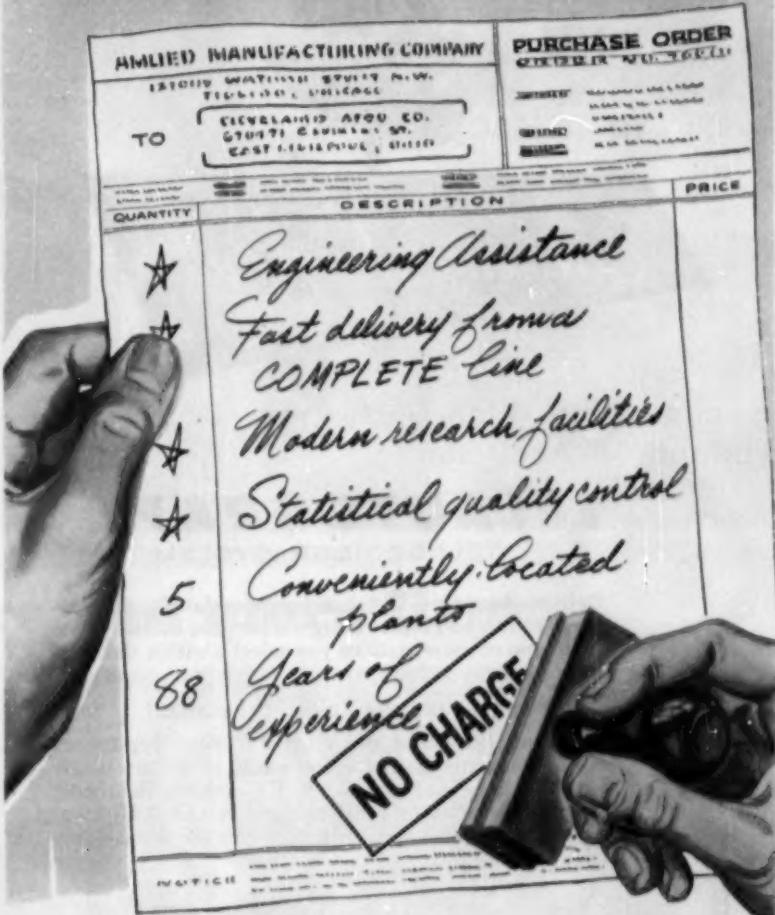
During the flight, one technician watches the EM, altimeter, and scintillometer graphs recorded on one roll of paper while another watches the magnetometer. The readings are keyed to continuous moving pictures of the ground. At intervals, the operators record on the graphs the number of exposures at those points.

The crew is normally out about eight hours, flying at 120 mph. The plane actually flies only 400 or 500 working miles a day but sometimes exceeds 1,000 miles. (The client doesn't pay for the mileage to and from the job or in making turns.)

• **Rapid Evaluation**—Back at the base, McClusky and Dr. Evans get together before dinner, and McClusky touches on the highlights of the day. After dinner, they meet on the back porch of the Queen's Hotel, against a backdrop of socks dangling from wire coat hangers and swim suits hanging over the railing. Occasionally the technicians and navigator join the meeting.

If one of the graphs shows something worthwhile, Dr. Evans can have men on

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We've never received an order like this—and never will.

But Lamson customers always get these extra values, and more, along with every bolt and nut order.

You, too, deserve these "extras" when you buy fastener products. They're yours automatically when you make Lamson & Sessions your source for fasteners.

The home of "quality controlled" fasteners



The LAMSON & SESSIONS Co. • General Offices: 1971 W. 85th Street, Cleveland 2, Ohio
Plants at Cleveland and Keweenaw, Michigan • Birmingham • Chicago

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WRITE
IT
IN



Electronic Longhand

Sends Handwritten Messages
Instantly -- Accurately

TELAUTOGRAPH*

TELESCRIBER SYSTEM

Delivers messages, sketches, business data . . . on plain paper or Instan-Forms* designed for your business data . . . to one or more stations you select—within the company or many miles apart.

Cost averages under \$1 a day per station!

Electronic Longhand, the result of 65 years' experience in communications, saves thousands of dollars yearly for companies such as Ford, B. F. Goodrich, Raytheon, Hotel Statler, Northrop Aircraft and St. Luke's Hospital (New York). 2500 major concerns now use it profitably in practically every type of business:

- MANUFACTURING
- BANKS AND INSURANCE
- CHEMICAL PROCESSING
- FOOD PROCESSING
- HOSPITALS

- HOTELS AND RESTAURANTS
- RETAILERS, WHOLESALERS
- TRANSPORTATION

*TM Reg. U.S. Pat. Off.



Send Coupon
for Full Details,
MAILED to you!

TellAutograph CORPORATION

Dept. 2D 1128 Crenshaw Boulevard, Los Angeles 19, California
Please send brochure on TelAutograph's use in my business:

NAME _____ POSITION _____
STREET _____
CITY _____ STATE _____
COMPANY _____
TYPE OF BUSINESS _____

... in one week, the airborne electromagnetometer can do work of a 10-year ground survey . . .

AIRBORNE starts on p. 64

the ground overnight to stake claim to the property.

Every night he calls Toronto to speak to Franc Joubin, managing director, or Harry Buckles, chief engineer, of Technical Mine. A word from Joubin or Buckles would be enough to start the ball rolling.

• Possibilities—Dr. Evans is a firm believer in EM, having used Inco's equipment when he was with American Metal. But he and the backers know that not every zigzag on the EM recorder is a copper mine. Graphite, for example, shows up often. However, with a knowledge of the geology of the area, they know which patterns look interesting.

Dr. Evans estimates that in one week the airborne EM can do the work of a 10-year ground survey.

Douglas G. MacKay, a geologist and general manager of Aeromagnetic, figures that for every \$100,000 a company spends on aerial surveys, it will spend \$200,000 on follow-up work: geochemical surveys, ground EM surveys to pinpoint drill sites, staking, and geological mapping.

After only nine months in operation, airborne EM is giving Aeromagnetic its biggest volume of business, even though its subsidiaries in the United Kingdom and Australia don't have it yet. Later this year, Aeromagnetic has a job scheduled in Africa. This is said to be the first use of aerial EM outside North America.

• Helicopter EM Next—The next development in the aerial geophysics field should be the perfection of a helicopter-borne EM, better suited for rugged mountain country and also for pinning down phenomena that the Canso's equipment spots. Work on the container is going on now. Helicopters are already being used with the scintillometer and the magnetometer.

Early models of airborne EM, only a few years old, require the plane to fly absolutely level. Such equipment is effective only when the air and the terrain are relatively smooth. Aeromagnetic's Finnish-developed EM allows the plane to go up over hills and down over lakes, eliminating errors that are caused by variable distance above the ground and permitting operations in almost any kind of weather.

"We're in business to make money," says MacKay. "We must fly all the time." **END**



DUPONT'S Barksdale, Wis. Works saves \$7,000 a year with new automatic combustion controls.

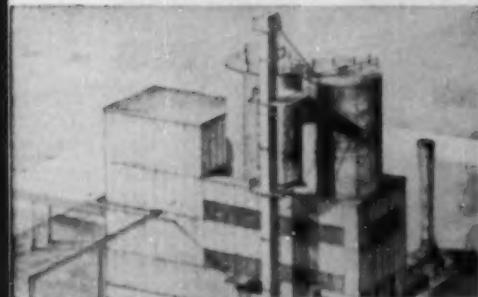


HUDSON MOTORS' modernized plant in Detroit saves \$480,000 a year—cuts powerhouse labor 27%.



SYRACUSE UNIVERSITY, N. Y., built a completely new unit for maximum economy and dependability.

For efficiency... for economy...



AT STAUFFER CHEMICAL'S new plant in Louisville, Ky., total cost of steam is only 60¢ per 1,000 lbs.



Coal costs 29.6% less than next cheapest fuel at ADDRESSOGRAPH-MULTIGRAPH'S plant in Cleveland.

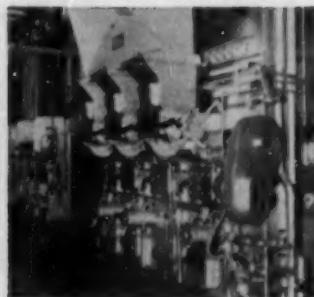


MOTOR PRODUCTS CORP. of Detroit, Michigan, saves \$54,000 a year with modernized installation.

more and more firms



Burning coal the modern way saves PENNSYLVANIA RAILROAD'S, Ft. Wayne, Ind. terminal \$33,000 a year.



Efficient new equipment reduces labor and improves performance records for LIGGETT & MYERS at Richmond, Va.



At LAKWOOD HOSPITAL, in Lakewood, Ohio, new automatic coal burning facilities cut fuel costs 22%.



UPJOHN'S new Kalamazoo, Mich. plant is clean and efficient with no dust or smoke nuisances.

are burning coal the modern way

Chicago's ultra-modern PRUDENTIAL BUILDING has fully automatic coal handling and burning system.

GOODYEAR saves \$3,000 a day with new coal-burning installation at Akron, Ohio.



facts you should know about coal

- In most industrial areas, bituminous coal is the lowest-cost fuel available.
- Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar.
- Automatic coal and ash handling systems can cut your labor cost to a minimum.
- Coal is the safest fuel to store and use. No dust or smoke problems when coal is burned with modern equipment.
- Between America's vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and its price remaining stable.

For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

NATIONAL COAL ASSOCIATION
Southern Building, Washington 5, D. C.

In Regions

Oil Company Buys Its Way Out of Tax Collector's Clutches

DEER PARK, TEX.—Shell Oil Co. and its subsidiary, Shell Chemical Corp., are paying a high price to keep out of the clutches of the tax collectors of Deer Park, a suburb of Houston.

For years, Deer Park has had a yen for the tax money that would come into its coffers if the plant sites of the two companies could be annexed. Just as strong has been Shell's desire not to be annexed.

To prevent this happening, Shell has signed an agreement with Deer Park whereby the company will pay twice the amount of taxes collected from all city property up to \$125,000 a year, and will build a combination city hall and fire station for the city at a cost up to \$70,000.

The suit between the city and Shell has been in the Texas Supreme Court six times, and it was just this spring that the court reversed itself and decreed that Deer Park could not annex the two plants. It had previously ruled that annexation was legal (BW—Aug. 14 '54, p123).

So, even in the light of the current ruling in its favor, Shell still entered the agreement with Deer Park, fearing perhaps another court reversal. Even if yearly payments do reach the \$125,000 mark, Shell officials feel that the company will save money.

In addition to its agreement with Deer Park, Shell also took steps to prevent annexation by either Houston or neighboring Pasadena, Tex. The two Shell companies petitioned the Deer Park City Council to annex a strip encircling the plants—a "No Trespassing" warning to the other two cities.

California Creates a City To Legalize Draw Poker

LOS ANGELES—Cities have been formed for many reasons, but very soon a Southern California city will be incorporated for the express purpose of legalizing draw poker.

The city is Cabazon, Calif., 17 miles northwest of Palm Springs and 88 miles east of Los Angeles. Cabazon (pop. 542) barely qualifies in size to incorporate itself, but last week it passed the acid test, and won approval of the Riverside County board of supervisors to hold an election on incorporation.

Jerry Kosseff, spokesman for the group seeking incorporation, readily admits that his real aim is to have the new city pass an ordinance licensing draw poker at a \$1-million, 100-room hotel he intends to put up.

Under California law, the question of draw poker is left strictly up to the municipalities. The state penal code outlaws games of chance by name, but draw poker

is not among them. The idea is that draw poker is a game of skill.

Behind Kosseff's eagerness to create a "poker city" is the fact that there always has been considerable sentiment in nearby Palm Springs for gambling. So Kosseff figured Cabazon was a natural—small enough to control, and near enough to a good market.

Cabazon no doubt will be modeled after Gardena, the so-called poker city located 15 miles south of Los Angeles. Gardena sports six fancy poker palaces, which cost between \$250,000 and \$500,000, and whose revenues exceed \$5-million a year. The original licensing ordinance in 1938 set a fee of \$50 a table. Today, it's \$1,000, or about \$35,000 a year for each club. The city also collects an additional \$1,250 per month when the clubs run over \$40,000 a month—which is every month.

The houses collect 50¢ an hour per player for the \$1 and \$2 games, \$1 an hour for the \$2 and \$4 game, and \$1.50 for the bigger games.

City Fathers Disagree On Plan to Improve Slums

MINNEAPOLIS—Plans to preserve and improve Minneapolis' downtown section (the loop) got a big hand from city officials and businessmen, but blueprints to upgrade the blighted lower loop ran into opposition.

The so-called lower loop is the worst area in the city—buildings are ancient and dilapidated. It is the remnant of the great transient labor market that once existed there for the farm hands and railroad builders from Ireland and Scandinavia, and, of course, the lumberjacks. Many such workers still spend their winters in the area, but many of the lower loop residents now are pensioners and more or less permanent.

The rehabilitation plan proposed by A. C. Godward, executive director of the city's Housing & Redevelopment Authority, proposed:

Purchase by the authority of 32 acres of lower-loop land for an estimated \$9.5-million.

Demolition of its buildings and improvement of the sites.

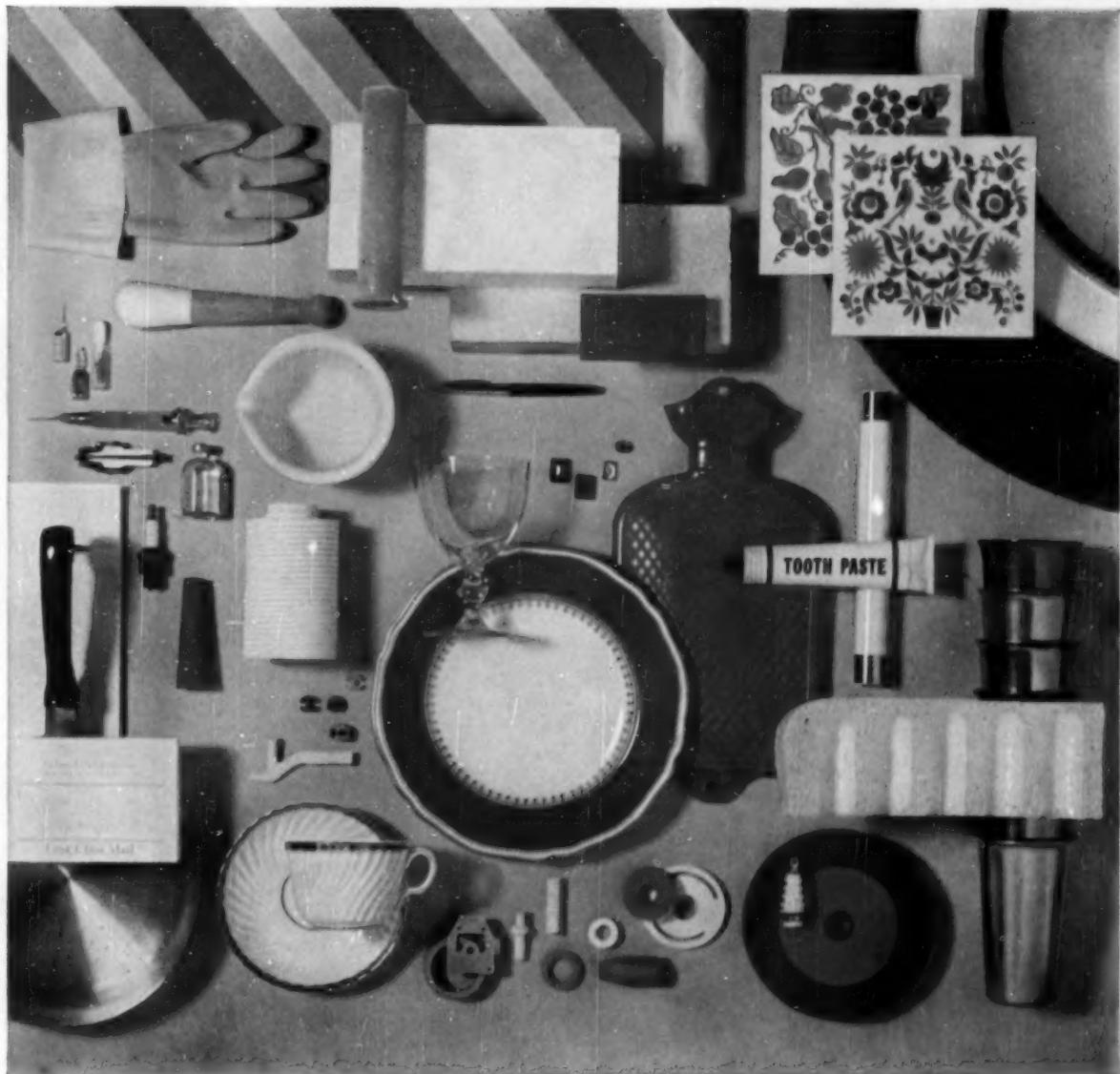
Resale of the land to private investors for uses approved by the authority's plans for the area.

Heading the opposition is Herman Olson, Minneapolis planning engineer, who wants a Twin Cities expressway cutting through the area.

Salmon Industry Faces Poorest Year

SEATTLE—The once-great salmon packing industry faces one of the worst years in its history. Even if the pack turns out to be 24-million cases, it will be the smallest since 1907, when the count was 2,202,100 cases.

The pack in Alaska has been on the downgrade since the late 1930s. In the past few years, it has been curtailed through efforts to allow greater escapement of



Every product in this picture is made with the same chemical.

WHAT IS IT?

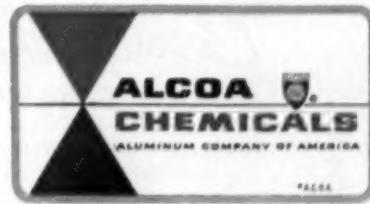
One chemical is common to all of these products. It goes into the manufacture of these—and many more products—because it makes them perform better . . . makes them better buys for you.

It makes tooth paste polish teeth *brighter* . . . spark plugs last *longer* . . . refractories withstand *higher heat*. It makes abrasive wheels cut *faster* . . . ball-point pens write *better* . . . thread guides and dies last *longer*. It makes rubber *stronger* . . . glass *brighter* . . .

whiteware whiter. It improves catalytic reactions and dries gases and liquids *drier* than any other commercial desiccant. What is it?

It's not a new product. In fact, it's been around quite a while, serving almost every industry in some way or another. It's ALCOA Alumina—aluminum oxide—one of the largest selling pure inorganic chemicals in the world. You're probably using it somewhere in your product or process. If you're not, perhaps you should.

Write for information and samples today. **ALUMINUM COMPANY OF AMERICA, CHEMICALS DIVISION, 700-J Alcoa Building, Pittsburgh 19, Pa.**





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SOCONY MOBIL



Correct Lubrication

FIRST STEP IN CUTTING COSTS

SOCONY MOBIL OIL CO., INC., and Affiliates:
MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION
Formerly Socony-Vacuum Oil Company, Inc.



It was the fabulous automobile industry that popularized mass production a generation ago. Now, through the miracle of "Automation," this same industry is combining mass production with *mass precision* to produce better cars—for more people—than ever before possible.

Today, in leading plants, rough metal forgings and castings enter one battery of machines, are routed by automatic transfer devices to succeeding batteries of machines, and finally emerge as finished engine blocks, crankshafts, pistons, etc.

In one plant, for example, rough engine blocks pass at the rate of 100 an hour through 637 different machines and transfers, and come out—after some 1,000 separate machining and testing operations—finished to within tolerances of one ten-thousandth of an inch.



Precision!

INDUSTRY DRAMATIC BOOST BOTH IN QUALITY AND QUANTITY, LUBRICATION PLAYS EVER MORE VITAL ROLE

What Automation Is . . . This linking together of machines and transfer devices to obtain high precision finish of mass-produced parts is called "Automation." The many devices used to achieve this marvel of mass precision stagger the imagination. Electronic, pneumatic and hydraulic equipment controls the transfer of parts from one operation to another, positions each part for

 accurate machining, indicates when to change cutting tools, measures and sorts parts, pin-points trouble instantly should it develop. Even testing is done electronically, with parts automatically inspected at frequent intervals and ejected from the line if out of tolerance.

Correct Lubrication Vital . . . In all this maze of complex machinery there is one common factor of ever increasing importance. This is *Correct Lubrication*. For in Automation—more than in any other manufacturing

process—continuous, trouble-free operation and immediate response of every moving machine part spell the difference between success and failure. Should a single part of a single machine fail, it can bring an entire battery of machines to a standstill.

This is why so many leaders in Automation have entrusted their multi-million dollar plants to Socony Mobil—world leader in lubrication. In these plants, Socony Mobil engineers work continually with operators and machine builders through a program of *Correct Lubrication* to help keep production flowing smoothly—hold maintenance costs to a minimum.

Whatever *your* manufacturing process—whatever *you* make—you can get a similar program of *Correct Lubrication* started in your plant to help improve your production—cut your costs. Just call Socony Mobil.

RED HOT... AND COOL!



**Faster than the speed of sound—
but Harrison holds the heat down!**

Like a bullet boring into the sky . . . up—up—up! America's swiftest, hottest jets are on the move. But with Harrison heat exchangers on the job, engines are running cool—temperatures are under control. In fact, you'll find lightweight, heavy-duty Harrison coolers on the job in just about every type of modern aircraft. Design of special cooling equipment for the world's finest, fastest jets is another example of Harrison leadership in temperature control. Long experience and extensive research facilities mean that Harrison is ready and able to meet the cooling demands of the Jet Age. If you have a cooling problem, look to Harrison for the answer.

Harrison Radiator Division, General Motors Corp., Lockport, N.Y.



TEMPERATURES

MADE
TO
ORDER

HARRISON

salmon for spawning, to build up the runs for later years. But nobody knows yet how effective this program may be.

One result of the dip has been to put the price of salmon up. On top-quality red salmon, in 1-lb. cans, prices range from \$32 to \$33 a case at Seattle. This compares with \$28 last year and with the previous high of \$32 in 1951.

Even these prices won't return the costs for many packers. For some, it will mean red ink for three years in a row.

In Canada, too, the Dominion's most important commercial fish is facing tough going.

In British Columbia, proposed new dams on the Frazer River threaten the province's catch, and a power-fishing fight is brewing.

One expert says that salmon going back upstream from the ocean to spawn can get up ordinary fish ladders, but the dams would be so high that the ladders wouldn't work. Another theory is that the salmon could get upstream, but the young smolt would be sucked to their doom into penstocks and turbines.

In New Brunswick, fishing interests are concerned over the announcement that budworm spraying in forests might have to be continued another three years. Fishermen believe that the spraying has killed thousands of young salmon by destroying the tiny insects on which they feed.

• • •

Regions Briefs

The Ohio Turnpike is scheduled to open Oct. 1, picking up traffic from the Pennsylvania Turnpike and carrying it 241 mi. westward. All that remains to link New York and Chicago wholly by expressways is the completion of Indiana's 150-mi. toll road and of a short link between the Pennsylvania and New Jersey pikes. Both should be finished in 1956.

Hostesses for streetcars and buses will be tried out in Dallas during non-rush hours. They'll give away samples for companies at a fee of \$2,500 a month.

Alabama's deepest oil well turns out to be its richest. The wildcat well at Citronelle, 20 mi. from Mobile, blew in at 10,900 ft. No other Alabama producing well exceeds 6,200 ft. in depth, and none matches the density of its oil.

KIDDE KNOWS AUTOMATIC FIRE DETECTION!



Ideas gleaned from this rate-of-temperature-rise detector may save your business—and your life!

Working on the principle that overheated air expands very quickly, Kidde's rate-of-temperature-rise fire detector spots a blaze the minute it starts, instantly triggers Kidde CO₂ industrial and yacht fire extinguishing systems to insure dependable, *automatic* fire protection!

Other Kidde equipment—the Kidde-ATMO system for schools, hospitals and public buildings—also uses this rate-of-rise principle to sound a life-saving alarm whenever fire strikes. Capable of guarding thousands of square feet of space, Kidde-ATMO can give full protection even when outside power fails!

Kidde also detects fire in the skies—with a thin, heat-sensitive wire which forms a continuous circuit around aircraft engine nacelles and other danger spots. Foolproof, the Kidde detector sets off an alarm, keeps signalling until fire is out!

In marine and industrial applications where smoke first heralds trouble, protection comes from Kidde Smoke Detecting Systems. From various danger zones, the system continually "sniffs" air samples into a special analyzing unit. There, smoke is detected immediately, causing an alarm to sound.

Years of experience in the field of fire detection have given Kidde engineers a vast amount of knowledge which is yours for the asking. If early fire detection is one of your problems, write Kidde for the answer!

Walter Kidde & Company, Inc.
925 Main Street, Belleville 9, N. J.
Walter Kidde & Company of
Canada, Ltd., Montreal-Toronto

Kidde



The words 'Kidde', 'Luz', 'Luz-O-Matic', 'Fyre-Frees' and the Kidde seal are trademarks of Walter Kidde & Company, Inc.

New B&D Sander, 20% lighter, 20% more powerful

This new Black & Decker 7" Standard Sander has been redesigned to give you 20% more power for your tough jobs—yet it weighs 1/5 less. Better shaped handle reduces operator fatigue. Spiral bevel gears provide an even flow of power. Special B&D-built motor tailored to fit the heavier demands of this model. Use with accessories to sand, grind, wire brush. See your B&D distributor for demonstration. Write for catalog to: THE BLACK & DECKER MFG. CO., Dept. W995, Towson 4, Maryland.

See "Tools-Electric" in phone directory for

Black & Decker®
PORTABLE ELECTRIC TOOLS



Whatever you make or sell, you can arouse interest in your products quickly, and stimulate sales by exhibiting them in Michaels Time-Tight Display Cases. These cases are used by many manufacturers; by concerns who give premiums for the purchase of merchandise (as illustrated above); for displaying any number of items that sell through retail outlets.

Many styles are available—wall, aisle, table, suspended, recessed, and special cases. Visibility is perfect, and Innerlocking Frames, exclusive with Michaels, reduce to a minimum the possibility of theft as well as the ingress of dirt, vermin and moisture. Why not explore the possibilities of using Michaels cases. We'll be glad to send literature which contains complete data.

THE MICHAELS ART BRONZE CO., INC., P.O. Box 668-B, Covington, Kentucky
Manufacturers since 1870 of many ferrous and nonferrous metal products

*Michaels
Display
Cases
help build
Sales*



"Bums" in Field . . .

. . . for a new ball park, as Brooklyn's favorite team finds its Ebbets Field inadequate and losing fans.

WANTED: A NEW PLANT SITE. We've outgrown our current plant, must have another in operation in two years. Must be perfect location, with access to guaranteed markets. Willing to buy at nominal value, or pay small rent if local government will supply plant and site.

That ad never appeared, of course. But in essence it's the price one private business is asking to stay put. The Brooklyn Baseball Club—sometimes known as the Dodgers—needs a new home badly, because of its inadequate facilities and declining revenues. The problem is that the club doesn't want to move away from its old stamping grounds; Brooklyn and "Dem Bums" have loved too long. But there aren't many available places in the old neighborhood.

• **Revenue Off**—Ebbets Field, home of the Dodgers since 1913, ranks only 12th in seating capacity out of the 16 ball parks in both major leagues. Its parking area can handle only 700 cars—compared with 14,000 spaces available to Milwaukee Braves' fans—and its stadium facilities are below today's standards. As a result, admissions have dropped steadily from 1.8-million in 1947 to 1-million last year.

Television accounted for part of this toll in revenue, but the Brooklyn box office dropped 44% over the eight-year period, while that of the Dodgers' arch rivals, the New York Giants, dropped only 31%. "We've got some television income sure," says a Dodgers official, "but our total income today is less than in pre-TV days."

• **Breaking the News**—The club let it be known that it wanted to move through an announcement that it would play seven games next year in Jersey City "as a trial." Later, Walter F. O'Malley, president, added that the club would leave Ebbets Field by 1958 under any conditions.

Offers for new locations came in from communities in Long Island and New Jersey—almost all of them better bets in terms of paying customers than the present site. Rumors had the Dodgers moving as far away as Los Angeles. There also was talk of how the Boston Braves bettered its market by migrating. In its hometown, the Braves raked up an attendance of only 281,278 in 1952; but when it became the Milwaukee Braves (BW—Oct. 3'53, p122), it drew over 2-million paid admissions last year.

• **Love That Team**—But in Brooklyn, baseball is an obsession. There are those who maintain that the city and its beloved Dodgers couldn't live apart, that if the team left, the town's spirit would leave with it. So citizens and officials immediately rallied to do something about finding a home for its team; and most fans assumed that it would be taken care of.

The Dodgers themselves seem to feel the same way. O'Malley announced that he wouldn't think of moving out of town "until and unless it's established that nothing can be done for the Dodgers in Brooklyn." The team came up with its own solution: a 40-acre site in the heart of town, now occupied by an outmoded railway station, a wholesale food market, and an assortment of down-at-the-heel industrial properties. If the city will condemn the property, the Dodgers could pay about \$1.5-million for the land, and spend another \$4.5-million for a new stadium.

• **Odds**—The location would have certain advantages for a ball park. It's at a conjunction of four subway lines, a railroad, a half-dozen bus lines, and several main streets. Only trouble, according to a Brooklyn city official, "He's picked the most valuable piece of real estate in town except for the downtown commercial area itself. It would take weeks to work out the tax assessments on that parcel, there are so many small properties on it. But if you could come within smelling distance of \$6-million on it, I would be surprised."

The Long Island RR, which has its Brooklyn terminal on the site, hints that it would be pleased to exchange air rights over its site for a new modern terminal underground. But the Dodgers don't have that kind of money. And realty lawyers agree that the local government would have no authority to condemn property for a private business that—no matter how Dodger fans feel about it—is not "in the public interest."

Meanwhile, Horace Stoncham, president of the New York Giants, announced that if the city helps the Dodgers get a new park, the Giants want one, too.

• **One for All**—The threat to move brought out a suggestion that New York follow the lead of Cleveland, Milwaukee, and Kansas City—and build a municipal stadium for the local teams to use. Brooklyn's Borough President has asked the city for a \$100,000 "survey" of the general area in which the Dodgers want to locate. But according to one City Hall spokesman, "It's a poor bet that the city will put any money into a stadium—especially since we're practically broke now, and there would be no chance of any federal aid." **END**

Greater profit opportunity now at hand in building market, says F. C. Russell

Pioneer manufacturer of home weather-comfort products foresees new sales-pioneering era for distributors, dealers, and salesmen with The F. C. Russell Company



"Today, two major factors have combined to create a greater-than-ever profit opportunity in the building market.

"One of these is the continuing building boom in new-home construction. Economists report that the boom in residential construction continues to show increases all over the nation. The other factor is a new modernization concept for existing buildings, including hotels, institutions and commercial buildings.

F. C. Russell Moves to Meet the Opportunity

"To make the most of this development, the F. C. Russell Company is enlarging its entire sales pattern through a series of major moves. These include intensifying our distribution network, enlarging existing divisions, developing new ones, and aggressively promoting our products to the buying public on both the consumer and builder levels.

"As a result, we are now looking forward to the greatest sales period in our history for the complete F. C. Russell line of products: Rusco Prime and Combination Windows, Combination Screen and Storm Doors, Awnings, Jalousies and Porch Enclosures.

An Invitation to Businessmen

"As an essential part of this program, we are inviting seasoned businessmen to join with us as *franchised* distributors, dealers and sales representatives, affording them the opportunity to make profits well above the average. By selling the F. C. Russell line, these businessmen will be selling a standard of quality that places them above and beyond pure price competition.

"We are confident that for those who accept the challenge of this new sales-pioneering opportunity, the rewards will be very great indeed.

"Inquiries will be promptly handled by our Sales Department."

The signature of F. C. Russell, written in a flowing cursive script. Below the signature, the word "President" is printed in a smaller, sans-serif font.

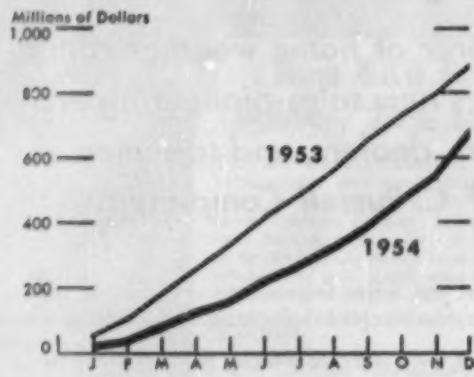
The F. C. RUSSELL Company

Dept. 8-BW95, Cleveland 1, Ohio • In Canada, Toronto 13, Ontario

THE RAIL STOCKS: Wall Street's "Contrary Mary"

In 1954 when rail earnings were sagging badly . . .

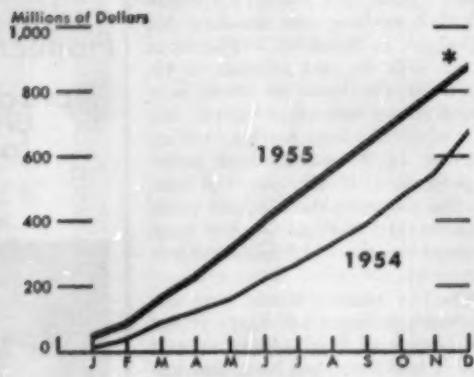
1



Data: Assn. of American Railroads.

But the picture is different now. Although rail earnings are zooming once more . . .

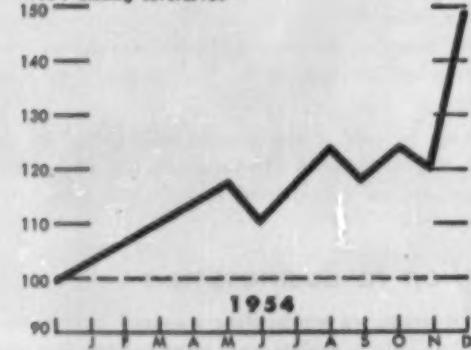
3



*BUSINESS WEEK Estimate.

2 . . . Here's the strength the carrier shares exhibited

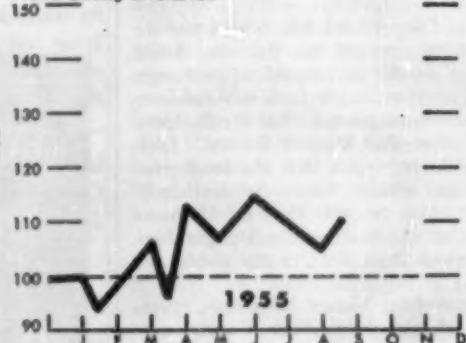
1953's Closing Level = 100



Data: Standard & Poor's Corp. Daily Rail Stock Index.

3 . . . The rail group has recently lagged badly

1954's Closing Level = 100



BUSINESS WEEK

Why the Rails Act As They Do

This year the railroads' operating story, like that of most trades, should be most cheerful reading. Indeed, unless something unforeseen pops up in the months ahead to send this important segment of the economy sprawling flat on its face, 1955 appears destined to go down in the archives as one of the carriers' great years.

True, you would never think this was the prospect if you looked only at the ragged price performance of most rail shares on the Big Board (charts above). You can see it, though, on the operational side, where some gaudy operating estimates are beginning to show up.

It now seems likely, for example:

Gross operating revenues of the nation's Class I carriers (those reporting yearly grosses of \$1-million or more) will run around \$10-billion. That's about \$600-million, or 7%, better than last year.

This gross is not a record-breaking figure, it's true. But the roads have previously topped \$10-billion in only three

IN THE CRUSHED STONE INDUSTRY, TORRINGTON Bearings are used in many applications including crushers, screens, shovels, cranes, pulverizers, grinding mills and rotary kilns.



Photograph courtesy of Caterpillar Tractor Co.

TORRINGTON Radial Roller Bearings

are designed with one-piece bronze retainer
that keeps rollers correctly aligned
and effectively lubricated

Here are other reasons why TORRINGTON RADIAL ROLLER BEARINGS can meet your load and speed requirements. Only the finest quality steels, heat treated according to the most modern methods, are used in manufacture.

Precision tolerances and finishes on both rollers and races guarantee low eccentricity and uniform load distribution.

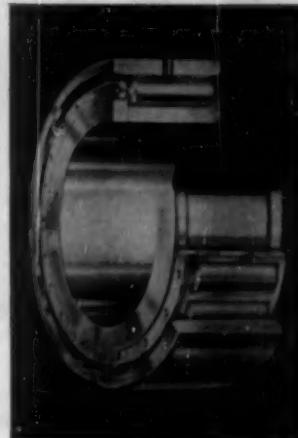
One-piece, cast-bronze cages help

minimize wear, facilitate lubrication, and lengthen bearing life.

Machined pads in each cage-pocket guide the rollers accurately at the pitchline.

Specify TORRINGTON RADIAL ROLLER BEARINGS for your equipment. They are interchangeable in all types and sizes and custom engineered to meet the toughest, heavy duty assignments.

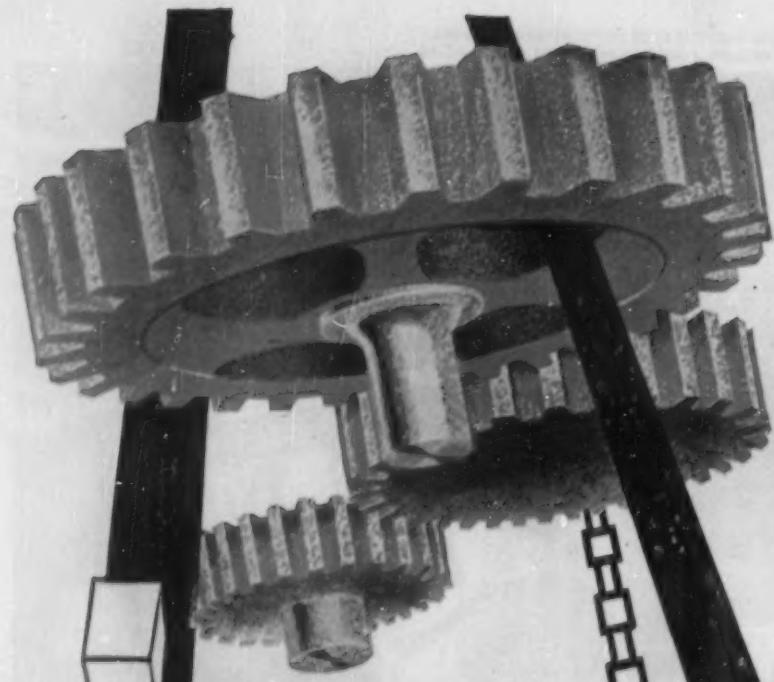
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years: 1951, 1952, 1953, when annual grosses ranged between \$10.4-billion and \$10.7-billion.

Profits after all charges should rise to around \$880-million. That's about \$210-million, or 32%, more than in 1954. And only three times in the past have rail profits ever proved greater: in 1953, the roads' all-time peak earnings year, when net came to \$902-million; in 1942, World War II's most profitable year, when earnings totaled \$901.7-million; and 1929, the rails' most profitable prewar year, when net added up to \$896.8-million.

• **The Paradox**—What's the reason then for the paradox revealed by the charts on page 80:

• On the one hand, the sharp rise of rail stocks last year, when revenues and earnings in most months ran sharply under 1953 levels.

• On the other hand, the rail shares' laggard performance during so much of this year when monthly operating reports have just as persistently revealed better results than a year ago.

As a matter of fact, this "paradox" is more apparent than real. Despite the many beliefs held to the contrary, stock prices do not always follow the direction that earnings happen to be taking at the moment.

• **The Answer**—The reason: Basically, the market is a "discourter." That's not to say that price movements are never influenced by current trends. Normally, however, investors and traders in their market moves (unless gambling for a "quick buck") are swayed more by their thoughts as to the possible shape of things six months or a year hence than by what is actually happening at the moment.

In other words, last year's steady buying of the rail stocks was inspired by beliefs that the sag in earnings of the carrier group at that time was destined to be brief and that 1955 would be a banner year for earnings. Current reports appear to confirm these beliefs.

By the same token, the laggardness of the rail group this year appears to be based on a look into 1956. The caution of investors and traders stems from the belief that:

• Present prices of most rail issues fairly represent full valuations (at least by past standards, if not by today's looser standards).

• Carrier earnings in 1956 could well prove quite a bit less than this year's.

• **Grounds for Concern**—Many smart Wall Streeters think such fears have swelled to unjustified proportions, and they could be right. Just the same, the caution that's being displayed by the majority can't be summarily dismissed: Whether or not you like it, it does have some firm foundations. For example:

• Most rail stocks are now selling at 8 to 10 times their anticipated 1955 earnings. Moreover, they offer yields that average below 5%, whereas 6% is closer to normal in that respect. By comparison, at the close of 1953, the rail group was selling at only 5.4 times earnings and on a 7.29% yield basis.

• Earnings of the rail group are currently being overstated because of tax deferments resulting from accelerated amortization. And many of the earnings gains being indicated this year are also due largely to the way maintenance budgets have been held to a minimum during 1955. Substantial cuts along such lines were similarly noticeable in 1954. As a consequence, many rail students expect that maintenance expenditures will have to be boosted sharply next year by many roads.

• Wage increases now appear very likely next year. And they could really hurt. At one time, the railroads had no hesitancy in passing along such increased costs to passengers and shippers. Lately, however, they have been following the policy of cutting their rates to meet competition.

• Cost Cutting—There is no question that the rail industry has made tremendous strides in increasing its operating efficiency since World War II. Dieselizeation has had a revolutionary effect upon transportation costs and costs generally. But other equally important changes have been overshadowed by the publicity that dieselizeation has received.

Railroads have saved operating dollars in wholesale amounts by such other developments as the installation of an increasing number of pushbutton freight-car classification yards, improved signal systems, the mechanization of much former hand work, improved shop methods, and the abandonment of unprofitable mileage and lightly used passenger trains.

It is impossible to figure up the exact savings in costs through such moves. It might be worth noting, however, that carloadings last May ran only 1.3% under their 1953 level while the average number of employees at work that month was 13.8% less than two years earlier.

• Lifesaver—Since the end of the war, the rails have spent more than \$9-billion to improve their operating efficiency. Wall Streeters say that without this program, few roads would have escaped bankruptcy in the postwar cost squeeze. Despite all that has been done, operating costs remain at high levels.

Back in 1929, for example, the industry was able to carry through to net earnings as much as 14.3¢ of each \$1 of gross revenues. This year, if present estimates prove true, the rails will be able to turn only 8.8¢ of each \$1 gross into net. **END**

This announcement is neither an offer to sell nor a solicitation of an offer to buy any of these Debentures. The offer is made only by the Prospectus.

\$67,000,000

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Thirty-Six Year 3 1/8% Debentures

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Due August 15, 1991

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Price 102.547% and Accrued Interest

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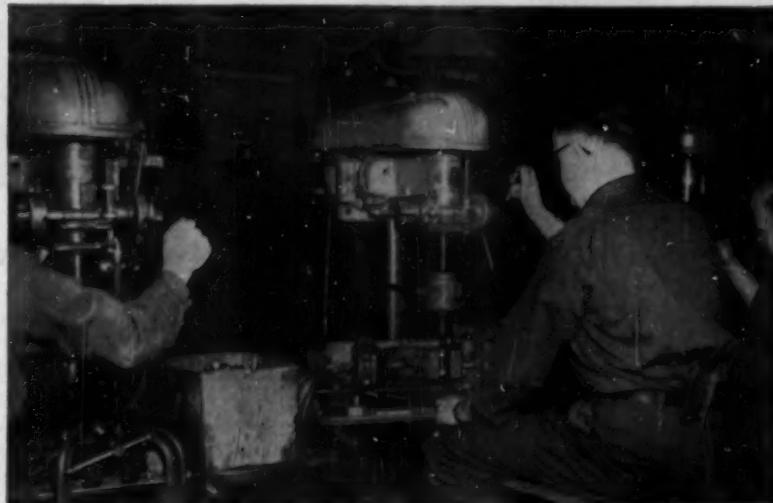
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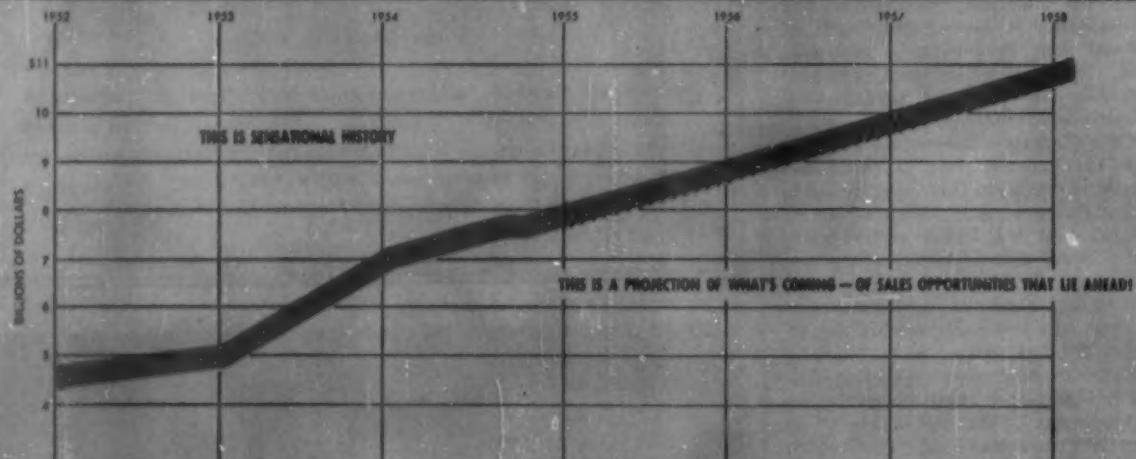
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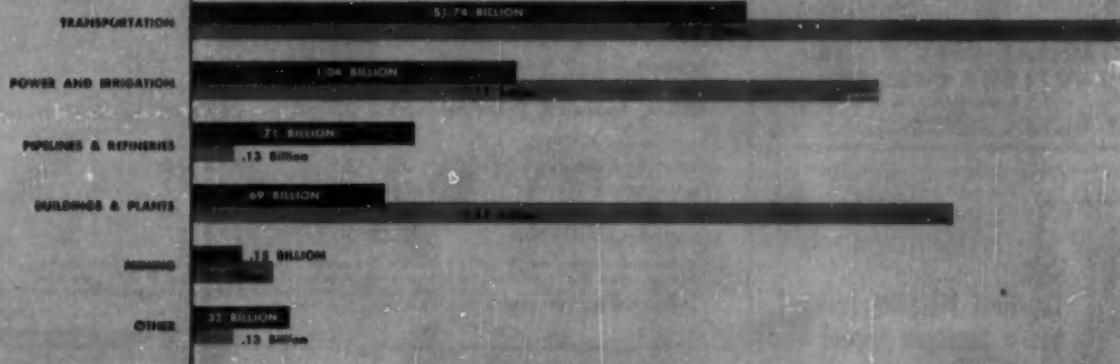
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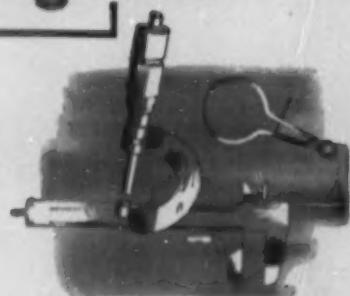
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STATESVILLE, NORTH CAROLINA

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The Year's Biggest Earners

—FIRST-HALF NET PROFITS—

(in millions)

1955 Rank 1954 Rank —GAIN—

	1955	Rank	1954	Rank	1955 vs. 1954
General Motors Corp.	\$661.0	1	\$425.3	1	55.4%
Standard Oil (N.J.)	344.0	2	293.0	2	17.4
The Bell System	(A)316.8	3	(A)262.0	3	20.9
E. I. du Pont de Nemours	186.4	4	152.2	4	22.5
United States Steel	177.9	5	93.9	8	89.5
Texas Co.	(B)116.6	6	97.5	6	19.6
Standard Oil (Cal.)	109.3	7	104.0	5	5.1
General Electric	101.9	8	93.9	7	8.5
Socony Mobil Oil	97.0	9	88.0	9	10.2
Gulf Oil	91.9	10	80.8	10	13.7
Bethlehem Steel	(B) 75.7	11	58.6	12	29.2
Chrysler Corp.	70.0	12	15.8	29	343.0
Kennecott Copper	65.4	13	42.1	15	55.3
Standard Oil (Ind.)	65.0	14	53.0	13	22.6
Union Carbide & Carbon	63.6	15	41.8	16	52.2
Shell Oil	54.5	16	63.4	11	-13.9
International Nickel	45.3	17	32.6	19	38.7
Phillips Petroleum	42.6	18	37.9	17	12.4
Republic Steel	41.1	19	24.8	24	65.7
International Paper	38.6	20	32.4	20	19.1
Sinclair Oil	37.8	21	36.5	18	3.6
Eastman Kodak	36.4	22	28.1	22	29.5
Aluminum Co. of America	36.0	23	19.2	25	87.5
Union Pacific R. R.	35.6	24	29.5	21	20.7
Atchison, Topeka & Santa Fe	33.2	25	26.0	23	27.7
Chesapeake & Ohio	31.6	26	17.6	28	79.5
Anaconda Copper	31.1	27	13.6	30	128.7
Westinghouse Electric	29.4	28	45.4	14	-35.2
Armco Steel	28.0	29	19.0	26	47.4
Weyerhaeuser Timber	26.3	30	18.8	27	39.9

A. Six months ending May 31, 1955 and 1954. B. Excludes non-recurring profits. NB. This table has been compiled from published first-half earnings statements. Due to the lack of such data some companies may have been excluded from the table that rightfully belong in it (Ford Motor, for sure; perhaps also Pacific Gas & Electric and Sears, Roebuck & Co.).

©BUSINESS WEEK

The Big Get Bigger

In the select society of the 30 biggest earners among the nation's non-financial corporations, the first half of 1955 brought no changes in tenancy among the four top places (table above).

General Motors Corp. was still perched on the top rung when this year's first-half earnings reports stopped coming in. As usual also, still playing "follow the leader" to GM, are Standard Oil Co. (N.J.), The Bell System, and E. I. du Pont de Nemours, in the order named.

• **General Gains**—As might be expected, profits rose generally among this year's biggest January-June money winners. Exactly 40%—or 12 of the 30—made gains ranging from 38% to 343% (Chrysler Corp., back among the elite after 1954's painful earnings lapse, hit the highest mark). Only two of the group, moreover, had lower first-half earnings than in 1954.

• **General Motors**—The biggest gainer

dollar-wise this year was GM. Indeed, it had no rival. GM's first-half profits rocketed \$236-million above their 1954 level. The total was actually only 20% less than its highest record for a full year: the \$834-million that the auto titan racked up back in 1950.

What's more, GM for the first time even managed to "lap" its two nearest rivals in earnings: Even after you combine the total first-half earnings of both Standard Oil (N.J.) and The Bell System, they still fall by some \$200,000 to equal GM's net.

• **Shifts**—Below the top four companies the latest list shows, as usual, considerable shifting of rank. Once again the oil business, with nine members, leads all other industries in number of appearances on the list. However, next in line—for the first time in years—were the metal mining and steel trades with four mentions each, and the railroads with three. **END**

FINANCE BRIEFS

New mortgages taken by life insurance companies reached a record of \$3.1-billion in the first half of 1955, the Institute of Life Insurance reports. At mid-year, the companies' total investment in mortgages was about \$27.5-billion, compared with slightly over \$6.5-billion outstanding at the end of the war.

Interest rates on commercial paper have been hiked for the eighth time this year. A rate of 2 1/4% has been set for prime four- to six-month notes. This brings the cost of this kind of borrowing to about double last January's rate. With short-term money rates continuing to tighten, dealers said they couldn't sell paper at the 2 1/4% rate that has prevailed most recently.

State tax collections jumped \$495-million to a new record high of almost \$11.6-billion in the 1953-54 fiscal year, the Commerce Dept. reports. This was about the same increase as in the year previous. Only seven states reported a decrease in tax collections from 1952-53 to 1953-54; Kentucky and New Jersey topped the list of increases with more than 15% gains.

Another rail merger? Wall Street has been wondering since Ben W. Heine- man, Minneapolis & St. Louis Ry. chairman, announced last week that the group he heads had acquired an option to buy 45% of Wisconsin Central Ry.'s outstanding stock. Heine- man's group, which won control of the M. & St. L. last year, is reported also to have bought heavily into the Chicago & North Western and the Chicago, Indianapolis & Louisville systems.

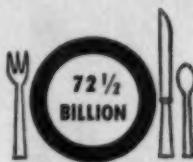
Bank salaries for lower-echelon employees in New York are being raised by Chase Manhattan Bank and Bankers Trust Co. The Metropolitan Life Insurance Co. is also reported to have raised clerical salaries lately. All deny that the raises have anything to do with a recent drive of the Office Employees International Union (AFL) to organize New York's white-collar workers in the financial district.

Railroads will be reclassified by ICC starting on Jan. 1. Class 1 railroads now include all those that gross \$1-million or more (page 80); the new dividing line will be \$3-million. That will cut the number of Class 1 roads from 126 to 113, and it will put 338 carriers in Class 2. The category of Class 3 (with revenues below \$100,000) will be eliminated, in the new classification.

FACTOGRAPH

The Food Processing Industry

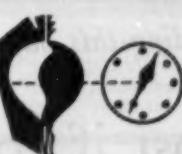
NO. 9 OF A SERIES



Back in 1900 the shelves of a grocery store carried only 200 food and related items. By 1939 the figure had reached 1000. But today you'll find food stores in this country carrying as many as 5000 different items. Hundreds of them are even carried to the cooking stage. This adds up to an annual sales figure of \$72 1/2 billion, or an average of \$440 for each person in the U. S. A.



In the processing of foods, mildew and germs have an excellent opportunity to thrive, as cooking often creates fumes that are loaded with nutrients on which these organisms can feed. In fact, it is said that when white painted walls take on a gray appearance, it is often not dirt but mildew. Hence the importance of quickly evacuating the cooking fumes, as well as heat and odors, from the processing plant. Bifurcator Fans, made by De Bothezat Fans Division of A. M. and M., are widely used in the industry for this important job.



Commercial processing of foods is, in many respects, as exacting as the processing of chemicals. Guesswork is out. Nothing is left to chance. Cooking temperatures must be maintained within narrow limits. Steam pressures must be carefully regulated and controlled. Timing must be accurate. In modern food processing plants a great deal of the precision automatic control equipment is made by United States Gauge Division of A. M. and M.



A recent survey shows that the average adult in the U.S.A. consumes about 1700 lbs. of food per year.



There are more raisins produced in the San Joaquin Valley of California than in all other countries of the world combined. One of the important operations in the processing of raisins for the market is the complete removal of all moisture after washing. This is done quickly and effectively by means of centrifugal extractors made by Tolhurst Division of A. M. and M.

19

American Machine and Metals, Inc. comprises nine divisions, many of which find an important market in the food processing industry. Each manufactures a line of related products; some have been serving industry for more than a century. All divisions benefit materially from the interchange of ideas, experience, know-how and facilities of the entire group. This plan of operation has proved remarkably advantageous, not only to the company but also to the customers of all divisions.

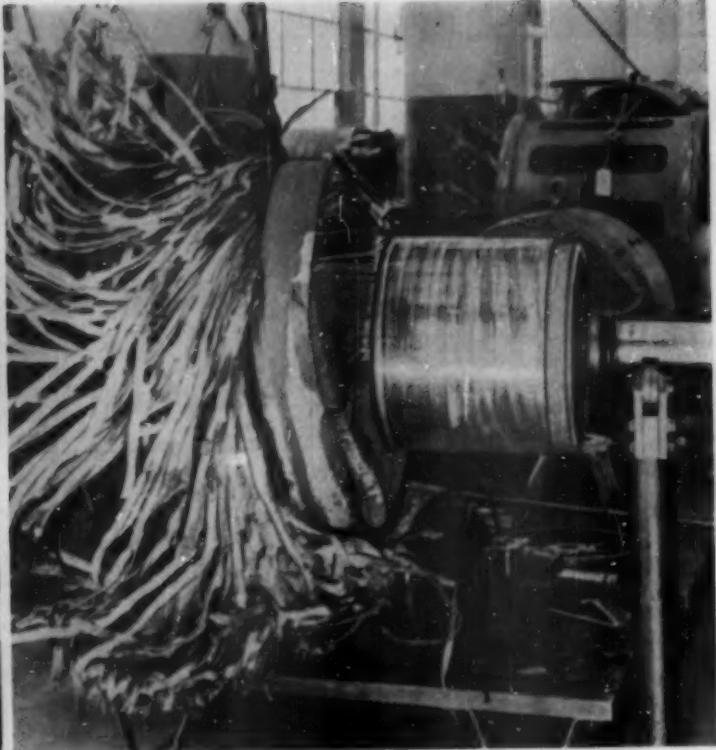


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Unions Hint at Demands to Come

What Rival Plans Provide for Guaranteeing Pay

Walter Reuther
and the
United Auto Workers



David McDonald
and the
United Steelworkers



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Initially up to 65% of take-home pay, then after four weeks' idleness up to 60%. Benefits would be scaled down on a basis of (1) size of the trust fund and (2) number of "credit units" accumulated at a rate of one for every two weeks' work

Approximately 65% of take-home pay, also scaled down according to size of the fund and "credit units" on the same 1-for-2 basis as UAW's. Additional \$2 a week for each dependent up to four

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Up to 26 weeks

Up to 52 weeks. After state benefits run out, the employers' fund is to pay full amount due

Coverage

All with one year's service

All with three years

Special Limitations

Eligibility for state unemployment benefits must be maintained

Claimant must establish and maintain UC eligibility. Additionally, claimant must have averaged less than 40 hours' work a week during preceding 52-week period—an overtime offset

Cost to Employers

Maximum 5¢ an hour per employee

Maximum 5¢ but in case of Continental Can there is only a contingent liability for 2¢ of this amount

Maximum Fund Levels

In the case of Ford, \$55-million or about \$400 per employee

At American Can, \$3.2-million or about \$160 for each of 20,000 employees. At Continental Can, no maximum is set

Length of Contract

Three years

Two years

Contingency

Integration must be OK'd in states in which most auto workers are employed

Effective regardless of action on integration if payments are allowable under tax and wage-hour rules

Current contract settlements leave little doubt as to what will be on union lists next year—in addition to inevitable demands for more pay, influenced by auto's automatic 2½% or 6¢ annual raise for 1956 and 1957 and the 3% or 4½¢, if greater, set for the same years in new General Electric Co. contracts.

With the major part of this year's contract negotiations out of the way, here is the effect of 1955 settlements probably will have on 1956 bargaining:

- The United Auto Workers (CIO) door-opening agreements on supplemented unemployment pay already are being broadened significantly. United Steelworkers (CIO) contracts with two big steel fabricators—American Can Co. and Continental Can Co.—go beyond UAW's pioneering agreements with Ford Motor Co. and General Motors Corp. in both amount and duration of payments (table). USW's broader program for a 52-week guarantee now becomes a key issue for basic steel in 1956 and the ideal of other unions.

- A relatively new "fringe" benefit, insurance covering major or "catastrophic" medical expenses, provided in the new GE contract with the International Union of Electrical Workers (CIO), undoubtedly will be sought by other unions. Although included in a few contracts before this (BW-Jan. 1'55, p58), major medical expense insurance—protection from the high costs of such illnesses as cancer, tuberculosis, or heart disease—never has been a major union demand. Spurred by the GE plan and one in the Lockheed Aircraft Corp. contract, this form of expanded medical insurance may become a hot issue in the year ahead.

- Two other new insurance demands appear to be in the making: In a number of negotiating sessions recently, unions have sought dental and diagnostic coverage.

- Pensions will continue to be on the bargaining agenda. Unions will seek higher monthly payments, such as USW's \$2.50 a month times years of service, with no limit, as provided in can company contracts, making possible a company-paid \$100 a month for a 40-year employee—plus social security. Another goal is a vested interest for workers in pensions, as provided on a limited basis for those with 10 or 15 years' seniority under auto, GE, and can company agreements.

- Cost-of-living "escalation" is re-

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viving as an issue, partly as a result of auto and GE contracts and partly because government index figures are rising again after months of stability (BW-Aug. 27 '55, p134). A few months ago, most unions were ready to drop c-of-1 clauses, and railroad unions did. Now, with costs going up again, unions want to keep the clauses—but with escalation at a faster rate. Typical is auto's 1¢ rise (or drop) in pay for every 0.5-point index change instead of the former 0.6-point. Because of this formula change, auto workers currently are getting 1¢ an hour more pay than they would have received under the old 1¢-for-0.6 point formula; since the last wage adjustment, in May, the index rose an even 0.6-point.

NLRB Rulings . . .

... continue to hinge on extent of board jurisdiction. Last week, it rejected three cases as being out of bounds.

If the first National Labor Relations Board with a Republican majority were to be rated on its performance to date, the agency probably would be remembered more for the cases it refused to handle than for the decisions it handed down. Its prime interest has been extent of board jurisdiction.

Last weekend, the five-man board ran true to form when it rejected a series of cases as not falling within its jurisdictional boundaries. These were the swan-song decisions under the board's GOP-appointed chairman, Guy Farmer, who resigned after two years to return to private law practice.

Under Farmer's leadership, NLRB turned out a set of new rules trimming the area of federal control over labor-management affairs. Farmer himself more or less followed the middle path in jurisdictional cases while being instrumental in cutting down the area of board operations. Since his departure leaves the agency divided over how far NLRB should go in accepting dispute cases, it means there will be strong interest—and possibly conflicting ideas—over a successor.

- **New Head**—Meanwhile, another GOP appointee, Philip Ray Rodgers, has taken over as acting chairman. Strongest advocate of trimming board jurisdiction, he is counterbalanced by a Democratic holdover through 1957, Abe Murdock, who has consistently dissented over board withdrawal from dispute cases. Hence, conflict over the extent of NLRB intervention in labor-management matters can be expected to continue, despite Farmer's leaving.
- **Score**—The latest decisions have im-

portant ramifications extending beyond the disputes at hand. While the decisions fit a pattern, the results were both good and bad as far as employers and unions are concerned.

The board reaffirmed a long standing policy against intervening in hotel labor disputes. It refused to take over an organizing dispute between Miami Beach hotel operators and AFL's hotel workers' union (BW-Aug. 20 '55, p100) and thereby signaled hands-off the entire industry. Rodgers, Ivar H. Peterson, and Boyd Leedom turned down a union appeal to intervene. Murdock reiterated his stand in favor of taking jurisdiction over the entire hotel industry. Farmer went down the middle, urged a full-scale hearing on whether the board's 20-year policy against taking hotel cases should be overhauled. Unions contended it should be, arguing that hotels do interstate business. The hotel industry strongly opposed any change.

The members, with unusual unanimity, agreed not to handle a jurisdictional fight between AFL construction unions. It cited the private National Joint Board for the Settlement of Jurisdictional Disputes as the proper agency to handle a dispute between AFL's lathers and carpenters over the installation of acoustical ceiling tile. Since 1947, this joint board has handled between-unions rows over job jurisdictions in the building trades.

In a sharp division, board members voted to turn down a case involving unfair labor practices charged against a union by its own employees. The majority held that the union—an AFL teamsters local in Portland, Ore.—was not an employer as defined under Taft-Hartley but exempt in the same way that nonprofit organizations are removed from NLRB control. AFL's office employees' union brought the charges against the teamsters local, alleging it fired several employees and threatened reprisals against others when they sought to organize an office workers' union. In this decision, Farmer voted with Peterson—a Democratic appointee whose term runs to Aug. 27, 1956—and Murdock.

Clearance—In another key decision prior to Farmer's departure last Saturday, but not involving board jurisdiction, the board cleared a Boston trucking firm that had fired 20 teamsters for striking without first resorting to compulsory arbitration provided by their contract. The union contested the discharges because the contract does not contain a specific no-strike clause. The board rejected this argument, ruling that compulsory arbitration carries with it an implicit bar against strikes because it is an "agreed upon substitute for all other methods for resolving disputes." **ENB**

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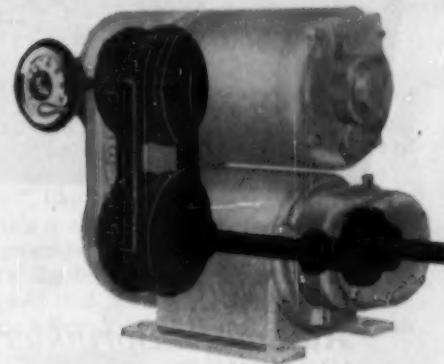
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Opening the Books

It's a confused labor-management issue, but Supreme Court may give new guides in test cases.

It started in 1946 when Walter Reuther, peering across the bargaining table at Ford Motor Co.'s negotiators, grated, "Let's look at the books." Ever since, employers have nervously guarded the right to keep management's confidential records out of union hands. Under federal laws, they haven't been too successful so far.

But now, the courts have just acted on two important cases bearing on the right of employers to keep their books close to their chests. Management is giving deep appraisal to both cases.

While the issues are different in each case, both involve the basic question of an employer's right to withhold from the union information he considers confidential.

• **Key Cases**—Parties in the cases were (1) a small structural and metal shop in Greensboro, N. C., and its AFL union; and (2) a New Orleans newspaper and the American Newspaper Guild (CIO).

In the first, Truitt Mfg. Co., in Greensboro, N. C., won an initial significant victory earlier this month when the Fourth Circuit Court of Appeals refused to enforce a National Labor Relations Board order requiring the company to show its books to the union. The court ruling, unless upset on possible appeal, could bring more legal tests of a show-the-books policy that NLRB has forged through the years. Until now that policy was generally supported in the courts.

In the second case, the New Orleans Item suffered a setback in the Fifth Circuit Court in a fight to withhold from the union detailed payroll information that it considered confidential. The Item plans to ask the U.S. Supreme Court to accept the case on appeal next month.

• **Ability to Pay**—The Truitt case blew up in 1953, when the International Assn. of Bridge, Structural & Ornamental Iron Workers (AFL) asked Truitt for a 10¢ raise. Truitt countered with a 2½¢ offer—and said that if it gave a greater increase it would lose business in bidding for contracts against employers with lower wage costs.

The union insisted that Truitt prove it couldn't meet the 10¢ demand by allowing a certified public accountant to examine its books. Truitt refused. The union took the case to NLRB, which ruled that since Truitt based its rejection of the 10¢ demand on the

argument that it was unable to pay, it must be willing and ready to document its argument. The Fourth Circuit Court refused to enforce the board's order. It explained, ". . . we do not think that merely because the company has objected to a proposed wage rate on the ground that it cannot afford to pay it, good faith bargaining requires it to open up its books to the union in an effort to sustain the ground it has taken." In effect, the court said that under Taft-Hartley an employer is required only to bargain with a sincere desire to reach an agreement, not necessarily to substantiate statements made in negotiations in order to prove its good faith.

Union officials said, "Such a decision cannot be left standing." They called on NLRB to appeal the case to the Supreme Court. NLRB was still studying the decision this week; a spokesman said that it might "not reverse the policy trend we have established in these cases, but it would sure apply the handbrake."

• **Merit Raises**—The important difference between the Truitt case and that involving the New Orleans newspaper—and in the divergent court decisions—lies principally in the information that each union sought. In the Truitt case, it sought general financial data; from the Item, wage data.

The Item contract with ANG expressly reserved for management the right to give merit raises, and the Item exercised this right, giving pay hikes to a number of its 50 employees represented by ANG. When new contract negotiations began, the union asked for detailed wage information on every employee, including the "date and amount of any merit increase in the past year."

Management gave ANG general information on merit raises, but refused to break it down to individual increases. This, said the Item, should be considered confidential between employer and individual employee. ANG took the dispute to NLRB, which ruled for the union. NLRB said the data was relevant "for administrative and policing purposes"—to determine whether merit raises had been given fairly.

The Fifth Circuit Court of Appeals upheld NLRB. The Item Co., publisher of the newspaper, will carry the case to the Supreme Court this October.

• **Clarification?**—If the Supreme Court accepts the Truitt and Item cases for review, management might get new guideposts on its hazy obligation to give labor the financial data it demands. So far, under NLRB policy and court rulings, guides on just how far an employer must go in "good faith bargaining" are far from clear and they vary from case to case and court to court. **END**

EASY ON THE EYES



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In Labor

No-Raiding Tryout Is Good Sign For Labor Unity, Say Officials

When the "no-raiding" agreement between AFL and CIO became effective early in 1954, it was hailed by labor as "the first and essential step toward the achievement of organic unity" of the two groups (BW-Jan.12 '54,p166). The pact has now been operating a little over a year—and the results, say high labor spokesmen, augur well for a successful labor merger.

In the first year, 46 charges of inter-union poaching were handled under the agreement. Procedure calls for representatives of the international unions involved to make the first attempt at settlement. If they fail, the secretary-treasurers of the two federations try their hand. If the issue still remains unresolved, the case goes to an impartial umpire, David Cole, a Paterson (N. J.) attorney. Of the 46 cases, 28 were settled at the first step, 10 are still under discussion, and eight went to Cole. He decided four cases, two were withdrawn, two are still pending.

The pact provides that if signatory unions are found guilty of violating the agreement, they will drop all attempts to represent the employees involved. But this has not always been observed.

In one case, AFL meat cutters clashed with CIO packinghouse workers. The case went to Cole, who ruled for the CIO. The AFL union, however, continued to press for an NLRB representation election—and not only got it but won it, too.

Under the constitution for the pending AFL-CIO merger, the no-raiding principle would be broadened. Member unions, some not now signers of the no-raiding pact and hence not governed by its rules, would find themselves barred from venturing into other unions' territory. Most notable nonsigner that would be affected is the International Brotherhood of Teamsters (AFL), frequently accused as labor's "raidingest" union.

NLRB Plays Button, Button, Tells Who Can Wear One

Union custom dictates that every member must wear his union button to work, as an outward sign of membership. In the heat of a labor organization drive, the union button becomes something more—an effective organizing weapon. So when employers ban buttons from the plant they may run afoul of the National Labor Relations Board. It is NLRB doctrine that workers have a right to wear union buttons unless they create special conditions that might threaten production or discipline. The question is: What are these conditions?

Caterpillar Tractor Co., in Joliet, Ohio, thought workers wearing buttons reading "Don't Be a Scab" were a threat to discipline (BW-Nov.13 '54,p165). It

feared the word "scab" would cause nonunion workers to bristle, might lead to violence. So it banned the pins.

Last week, NLRB ordered the company to drop its anti-button rule, give back pay to employees laid off for continuing to wear them.

At the same time, NLRB took up the case of the Kimball Glass Co., Kimball, Ohio. Rival unions complicated this problem. The International Union of Electrical Workers (CIO) was trying to organize plant employees who for years had been represented by the Glass Bottle Blowers Assn. (AFL). Officers of the AFL union protested to the company that the wearing of IUE-CIO buttons in the plant would surely lead to violence. Kimball then barred such pins.

NLRB again refused to accept the claim that threatened violence was justification for a ban on wearing union pins on company property. It ordered discharged workers reinstated with back pay.

UAW, Recalling Bad Licking, Is Wary of Burroughs' Bid

The United Auto Workers (CIO) may have another try at Burroughs Corp., biggest nonunion employer in the union's backyard. But it's taking no chances. The last time (fall of 1951) when UAW was a party to an election at Burroughs, it took what was probably its worst licking ever.

In the spring of 1953, UAW sought another election—but backed away after taking a rough count of noses. So a few days ago, when some Burroughs employees asked UAW for an organizing drive, the union said, in effect, "Come back when you grow up."

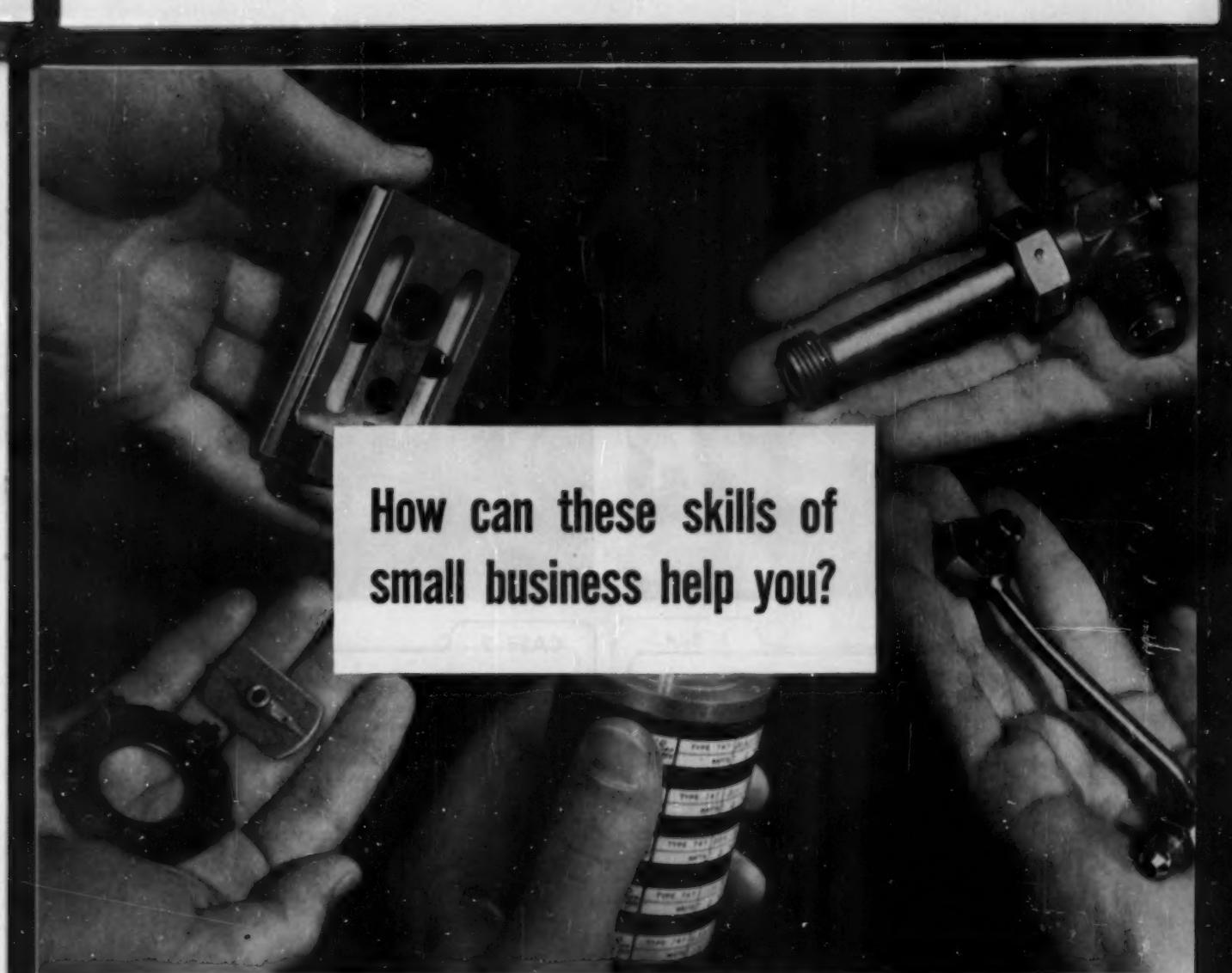
The new request for UAW intervention arose from a revision of Burroughs' incentive pay system. Changes in the incentive base led to walkouts, starting in a department where UAW sympathies are strong.

After the strike, Burroughs sent all its employees a letter asking, "Where do we go from here?" Stating that its wages are higher than its competitors', that it is caught in a cost-profit squeeze, the adding machine company said it could move from Detroit to a lower wage area, but doesn't want to. The letter challenged, "We suggest if our people want a union they do so in a democratic way."

Labor Briefs

No supplemental unemployment pay provision is contained in the agreement just signed by the Carboloy Dept. of General Electric with a Detroit local of UAW. A five-year contract covering about 800 employees, it follows the contract just signed by GE and IUE.

The Southern textile wage pattern now seems certain; it's 5¢ an hour. Big, nonunionized Burlington Industries announced the hike, and was quickly followed by other producers. The Textile Workers Union (CIO) bitterly termed the boost "actually an insult to the workers." But neither CIO nor AFL textile unions are strong enough to buck the pattern.



How can these skills of small business help you?

Many experienced G-E defense subcontractors offer capacity to help you speed production, cut costs

Over the past years thousands of small businessmen have developed special valuable skills and services as suppliers and subcontractors on G-E defense projects. Today G-E is vigorously at work on many vital defense programs; but as the Armed Services iron out the high volume peaks brought about by the Korean crisis, some of these highly trained G-E subcontractors have the capacity to work on other civilian or defense projects.

Experience in "operation teamwork"—G-E's long established policy of sharing defense orders with small business—means that these small companies have the knowledge and ability to meet exacting specifications and produce parts and assemblies with speed and efficiency.

Their special skills, tools and machines contribute greatly

to the defense effort, in speeding production and in cutting costs. Many have diversified their subcontracting activities and have developed marketable products of their own, thus adding to the peacetime economy.

Today most of these small businesses continue to contribute to the defense effort and all of them serve as part of the broad base upon which the future defense of America depends. Many of them, though, now have capacity in excess of current demands and may be able to apply their talents and skills to help solve your production problems.

HERE'S HOW SMALL BUSINESS CAN HELP YOU... 

GENERAL ELECTRIC



CASE 1

Name: Universal Machine Co., Fenton, Michigan

Part Manufactured: Housings, casings, retainers, sheet metal fabrications, etc.

Facilities: 65 skilled machinists in modern plant

Record: Co-operative, experienced, quality producer



CASE 2

Name: Meco, Incorporated, Paris, Ill.

Part Manufactured: Aluminum and stainless steel parts; weldments

Facilities: Added machinery and increased engineering staff; total employees 275

Record: Outstanding performance record since 1950; recently expanded operations in the field of electronics



CASE 5

Name: Varo Mfg. Co., Inc., Garland, Texas

Part Manufactured: Electronic components for armament system

Facilities: New plant with adequate equipment and 297 employees

Record: A very satisfactory, quality job on complex equipment



CASE 6

Name: J. Leukart Machine Co., Columbus, Ohio

Part Manufactured: Rings, gear cases and other precision aircraft parts

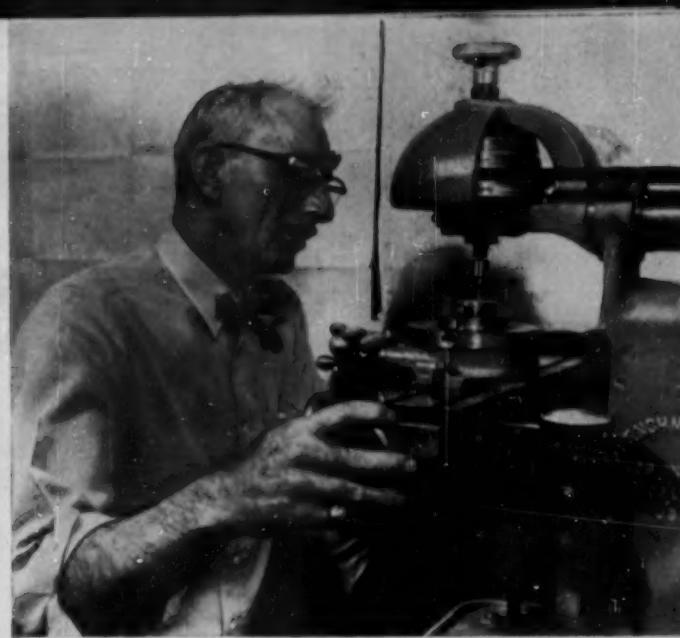
Facilities: 150 machinist and engineers in up-to-date plant

Record: Excellent quality source that consistently meets delivery schedules; experienced in machining titanium



CASE 3

Name: Watson Manufacturing Company, Jamestown, N. Y.
Part Manufactured: Sheet metal fabrication
Facilities: Completely modern plant with up-to-date equipment
Record: Delivery performance has been excellent



CASE 4

Name: Corry Instrument Co., Corry, Pa.
Part Manufactured: Bar spray, nozzles
Facilities: Modern plant housing 30 technicians
Record: Accurate manufacture of parts requiring extremely close tolerances. On-time delivery

These representative case histories show what the nation—and G.E.—gained from small business skills

The six small business firms shown here, with their manpower, skills and equipment, are representative of the more than 17,000 subcontractors and suppliers (for example, on jet engines 80% of them small businesses) who have teamed with General Electric in the production of defense equipment during the past five years.

Their record is enviable.

Often required to produce parts of extremely close tolerances and deliver in shorter-than-possible time, many of these small businesses have more than met their obligations. In terms of vital time saved and the consequent speed-up of defense production, their contribution has been of incalculable value to the defense effort.

What these typical firms and many others like them have done, teamed with General Electric, they may be able to do for you.

6494

Can Small Business Help You?



Thousands of small businesses, like the six illustrated here, have furnished General Electric with practically every kind of skill and service as defense subcontractors and suppliers.

Many of these companies have available production capacity, created in large part by the reduction of defense orders since the Korean War peak. This means that they may be able to apply their skills to help you with your production.

If you have a manufacturing problem or have work available for subcontracting, please write us on your letterhead stating in as much detail as possible the type of services or skills you require. We will be glad to suggest several small businesses who have done similar work for us and may be able to help you.

Write to C. W. Bryant, Manufacturing Services Division, General Electric Co., 570 Lexington Ave., New York 22, N. Y.

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Tomorrow's commercial jet planes will resemble this Boeing Air Force tanker-transport. Big decision for the air industry is today picking the planes.

Jet Transports—Two-Way Headache

Although commercial jet plane service in this country is still four or five years off, the airlines right now are up against the hard decision of choosing the jet transport they will put into the air. Sweating out their decision are two aircraft manufacturers—Douglas Aircraft Co. and Boeing Airplane Co.

The airlines, principally American, United, and Pan American, must make up their minds whether to buy the Boeing 707, which is already flying, or the Douglas DC-8, just now going into production.

The nail biting began on June 8, when Douglas announced it had ordered its DC-8 jet transport into production (BW—Jun. 11 '55, p32). Then Boeing disclosed that it had been given the green light to build commercial jet transport versions of its Air Force jet tanker-transport.

Since that time the two aircraft makers have been in constant discussion with the big airlines.

• **Indecision**—With unit cost of a jet running around \$4.5-million to \$5-mil-

lion, most airlines have been in no hurry to commit themselves. They are confronted with proposals for two jet transports that are almost identical in design and performance data. And both companies have long years of experience to recommend them—Douglas as No. 1 producer of air transports and Boeing as No. 1 producer of heavy jet bombers.

Even a proposal by Convair Div. of General Dynamics is pretty much the same. But Convair admits it is not in the race. It feels the market is hardly big enough for two builders at this time, let alone three.

One explanation for the airlines' indecision is the growing belief in the trade that they are not satisfied with either the Boeing version as it now flies or the original Douglas proposal. Both are built around the Pratt & Whitney J-57 engine. Douglas says it has submitted additional design studies using an improved J-57 engine and also a new engine, the J-75, which is more powerful and will give jets a longer

range. But the J-75 isn't a sure bet, although Douglas says there's a good chance it will be ready at the same time or sooner than the improved J-57. Boeing has submitted only one proposal to domestic airlines built around the J-57, but hasn't ruled out the new engines.

• **Pressure**—Pressing for an early decision—and the same decision by all airlines—is W. A. Patterson, president of United Air Lines. Because the airlines would get a better break costwise if they all order the jets from the same manufacturer, he has tried to give the impression that the first round of orders will be on an all-or-nothing basis. He figures the break-even point for a manufacturer at 80 planes and estimates orders at 180.

In a widely quoted speech in San Francisco, Patterson said United would place an order for 25 jet transports with either Boeing or Douglas by the end of the year. He said that he expected United's major competitors would place orders of similar size and

The lesson for today:



Carey Thermo-Bord was specified by Architects Durrand and Berquist, Dubuque, Iowa, for combination roof deck, insulation and finished ceiling (ceiling close-up shown at right) at West School, Baraboo, Wis.

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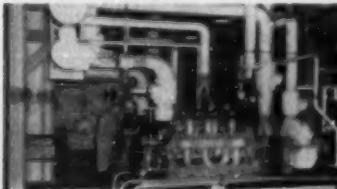
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probably with the same manufacturer.

But fact remains that some airlines may be willing to pay a higher price to get the plane of its own choice. In choosing jets, Patterson himself has said: "We can't afford to make a mistake on this; it would bankrupt us."

• **United's Eagerness**—The explanation of Patterson's drive to get airlines to order from the same manufacturer may lie elsewhere. United has been the most eager airline for starting jet service for some time.

This spring, when it appeared that Boeing's production would be tied up on its Air Force tanker, Patterson put the heat on Douglas' Pres. Donald W. Douglas (BW-Jul.16/55,p82). The United executive said his company would order jets before the end of the year. Douglas, at that time, hadn't even disclosed whether it would build jets or turboprops first. But, finally, on June 8, the company announced it was ordering its DC-8 jet transport into production.

Probably the fastest way for United to get jets into service is by ordering copies of the Boeing transport. But if the other airlines ordered an improved Douglas model with the J-75 engine or even an improved Boeing model, Patterson's hurry-up policy would prove short-sighted. So this may explain his attempt to get the other lines to go along with United on the first round of orders.

• **Prospects**—Best bet now seems to be that Pan American and TWA will buy the Boeing jet transport and the other lines the Douglas DC-8, with United splitting its order.

Among the smaller airlines, National has said it would buy six Douglas DC-8s. And Continental is planning to fly jets or turboprops between Los Angeles and Chicago if it gets CAB approval for the new route. It hasn't decided yet on the Lockheed Electra turboprop, Douglas DC-8, or the Boeing 707.

• **How Big a Market?**—Over the past year the size of the potential jet transport market has swelled considerably. A year ago manufacturers thought they could scrape up 50 orders for the first round of buying. Now the figure ranges between 180 and 200.

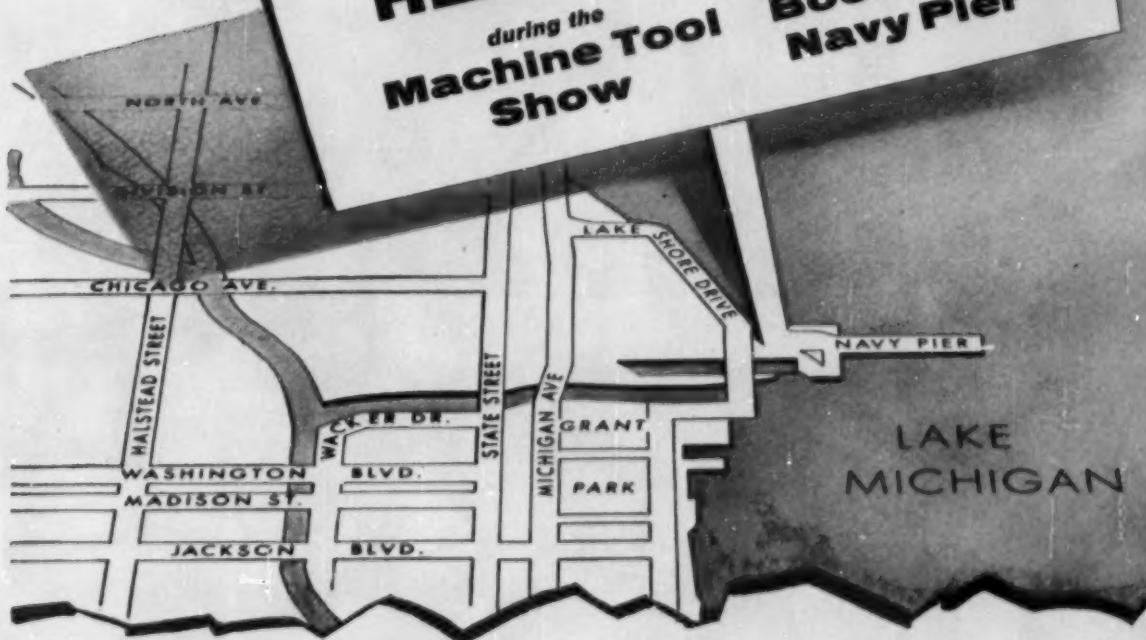
United is talking about operating jets in the summer of 1960. Boeing says it can deliver its planes sometime in 1958, which would permit commercial operations early in 1959. Douglas says it will make deliveries "in 1959."

• **Price**—The price of the transports—between \$4.5-million and \$5-million a copy—will be more than twice that of present piston planes. But revenue per jet will run between two and three times as high. That's because jets can carry twice as many passengers twice as fast, with lower crew and maintenance costs per passenger mile.

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Gas: On Call Near the Market

That legendary character, Colonel Edwin L. Drake, who died back in 1880, could well be turning in his grave at Bethlehem, Pa., these days. He was the fellow who first tapped an underground oil reservoir by drilling. He did this at Titusville, Pa., in 1859. Today, almost 100 years later, they're opening up the old abandoned oil wells that dot the scarred ridges of Pennsylvania's Allegheny Mountains—and pumping the empty reservoirs full again.

The product that's being pumped through the old wells and into the empty reservoirs below is one that Colonel Drake and his contemporaries despised—natural gas. They found it a nuisance in their oil operations, so they burned it on the spot. Today, of course, it's the basis for one of the U.S.'s biggest industries. And when you look deeper into the reasons why this industry is now using Pennsylvania's old oil pools as storage reser-

voirs, you get a new view of the powerful role that natural gas plays in the U.S. economy.

I. New Field

The pictures on these pages show how it's done.

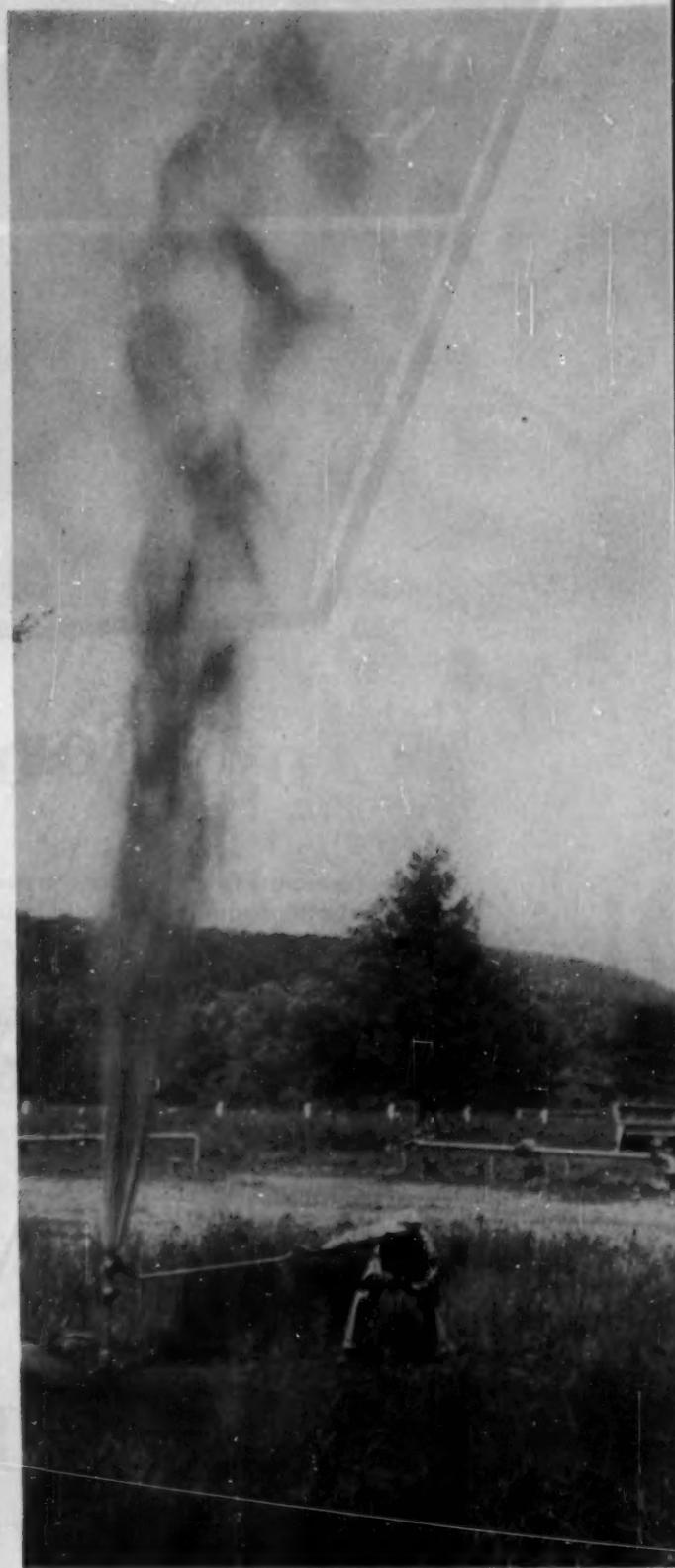
What's happening here at the old Hebron oil field in Pennsylvania is typical in preparing a worked-out field. The field's developers are Tennessee



SEARCHING out each old well leads deep into woods where ancient bull wheel (above) is clue.



DRILLING through old wells that will carry gas below. Those not used must be capped.



BLOWING petroleum liquids that accumulate in pipeline is done before gas goes below.

PETROLEUM WEEK

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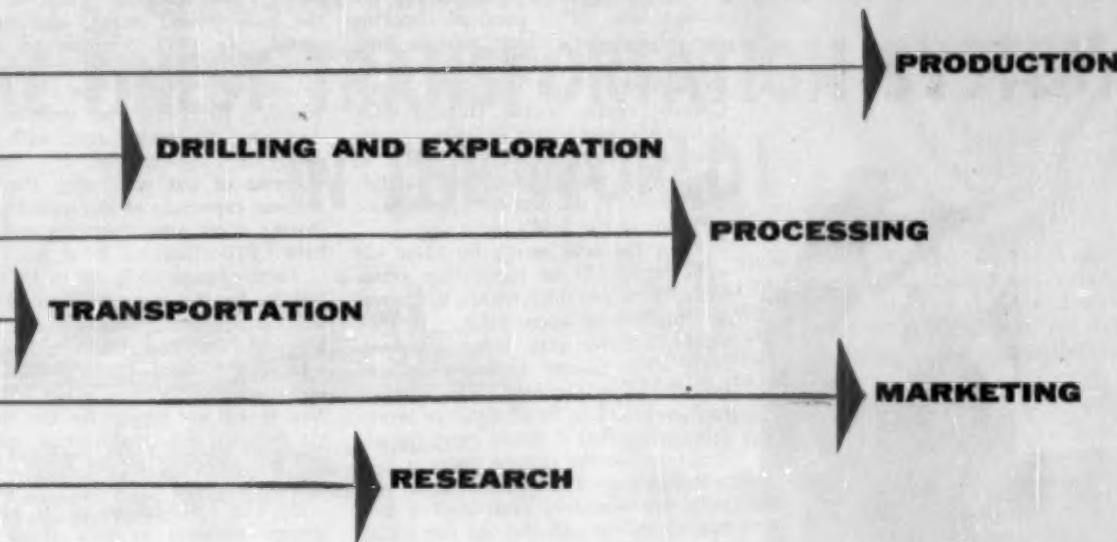
OPERATIONS

MAINTENANCE

GEOLOGY

PURCHASING

CONTRACTING



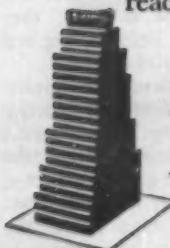
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MEASURING flow into storage at metering station. This step completes reservoir's preparation.

Gas Transmission Co. and United Natural Gas Co.

They began with a search for the storage site. This involved checking the oil industry's oldest records, finding the extent of the field. It involved, too, searching land records of Potter County, center of the Hebron field, to find who was owner, or lessee, or who held mineral rights of the land. It took long scouring of old oil production records to discover the approximate locations of the field's old wells.

Then the field search for these old wells began. It led into village cemeteries, deep into thick woods, and across the furrows of open fields. It took astute detective work and much stumbling across country to find every well ever drilled in the field. Once found, each well had to be plugged, or reconditioned so that it would carry gas underground to the storage reservoir.

• **Reclaiming**—To recondition an old well, the operators must drill a new hole down through the old one. Casings must be set and cemented in place—in fact, the job involves many of the same steps that are taken to bring in a new field.

The gas is pumped below through more than just one well. Several wells around a field are reconditioned for injection so that gas pressure at one end of the field can be kept equal to pressure at the other end. The gas is taken from the storage reservoir in the same way—from several different wells.

• **Expectations**—By the end of the year at Hebron, United and TGT will have reclaimed or drilled some 52 wells over an area of about 2,500 acres. Ultimately, some 70 wells will be used to fill and draw from Hebron's capacity. The plan is that enough gas will be stored at Hebron to provide an output of 225-million cu. ft. a day for 100 consecutive days.

Around the field there's a maze of pipes. Some spread out from the 2,000-mile-long transmission line that brings the gas from the Gulf Coast producing areas. Others link with the exit pipeline that's now being slammed into a 250-mile-long ditch leading from the field toward New York.

United and TGT estimate the cost of developing the field will run to about \$4-million.

II. Growing Fast

For gas pipeline operators, Hebron is a typical underground storage project. The price of the Hebron job makes up a part of the \$343-million that the industry has spent on developing underground storage pools.

Underground storage of natural gas isn't so new an idea as you might expect. As far back as 1915, gas was pumped back into the ground for stor-

ing in Welland, Ontario. Through the next 20 years a few similar small projects were handled. Then, in 1937, the underground storage idea sprouted ahead. In 1939, 8-billion cu. ft. of natural gas were stored underground. World War II sent the idea racing ahead. By 1943, the industry had developed 50 storage areas with a capacity of 135-billion cu. ft. And by the end of last year, after the great postwar expansion of the industry, 172 storage pools were operating and they held 1,010-billion cu. ft. of gas.

These storage pools are in 18 states, but by far the most of them—130 at latest count—are in Pennsylvania, West Virginia, New York, Ohio, and Illinois. • **Looking Ahead**—Underground storage of gas has become a big business. And it will get bigger, for the natural gas industry feels that storage space is still not sufficient for its needs. Some figures show why:

(1) The 1,010-billion cu. ft. now in storage amounts to only about one-ninth of a year's production. This, the industry feels, is not enough.

(2) Of last year's 9,426-billion cu. ft. production, only 67-billion cu. ft. went to storage. This is little more than four days' supply. This, the industry feels, is too low a rate of storage.

III. Underground Economics

Why should anybody want to take gas out of the ground in, say, Texas, pump it all the way to Pennsylvania, and then put a lot of it back into the ground?

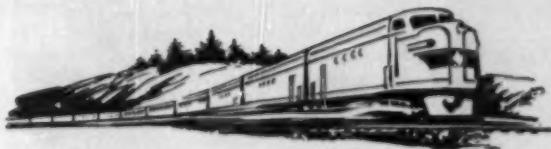
The answer is in two parts, both of them simple enough: (1) to have the gas near where it's needed most; and (2) to provide a place to store gas that's not needed in summer.

• **Demands**—Homes that use natural gas for heating burn, on the average, nine times more gas in January than they do in August. The home market is already of top importance to some big transmission companies. Last year they sold 1,937-billion cu. ft. to residential customers, only a fraction less than half of what they sold to industry. Now some of them are going harder than ever for the home market. If they were to build pipelines big enough to meet peak demand, they would be loaded with lines too big and too expensive for most of the year.

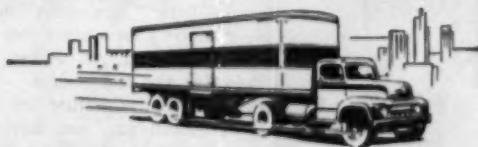
Another factor that prompts underground storage is an industry practice known as "take or pay." This means that a transmission company must take from a producer all the gas it contracted for, all the time—or pay for it, anyway. So by developing storage fields, the transmission companies can save paying out money for nothing.

The storage pools have concentrated near the Northeast because it's there

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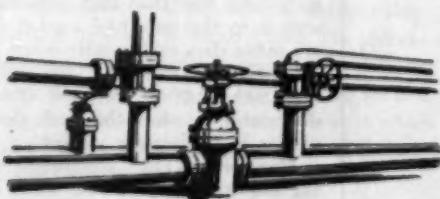
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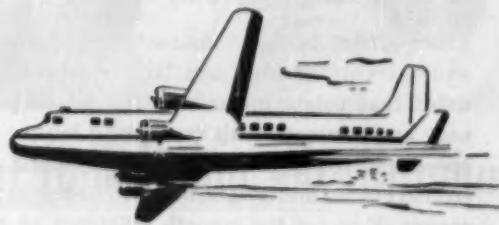
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that most of the nation's natural gas is used.

• **Eyes on Homes**—Pipeline operators look for an even bigger market in the Northeast. Some guess it lies largely in home heating. Tennessee Gas Transmission, co-developer of the Hebron field—and of four other fields in the same area—is banking probably more than any other operator on winning a big slice of this market through underground storage projects. Capacity of its five fields will be about 77-billion cu. ft. when they're fully developed, some time in 1960. TGT says the reservoirs will provide 770-million cu. ft. of gas a day for 100 consecutive days.

The entire project will cost around \$50-million, but TGT's Pres. Gardiner Symonds says this is less than one-third of what it would cost to build pipelines from Gulf Coast fields to supply the extra gas at times of peak demand.

That, anyway, is how TGT sees the future. Plenty of others disagree. In fact, there's little agreement even among the industry's top experts on the point at which stored gas makes, or loses, money for the distributor.

• **Equation**—To get a picture of the economics of stored gas, you have to consider two factors besides those mentioned above: (1) Natural gas sells at several different prices within the same area, depending on whether it's used for industry or for home heating; and (2) in periods of normal, or below-normal, demand, stored natural gas, because of the cost of its storage, cannot compete in supplying an industrial account with gas that's manufactured near the industrial consumers.

That's why the transmission companies that are developing underground storage reservoirs are aiming at home use rather than industrial sales.

In sending it to the home heating market they can charge far more for each cubic foot than they would if they sent it to the industrial market. There are many days each winter when stored gas, still too expensive for industrial customers, can be released from underground to meet the peak demands of the home heating market.

• **Unresolved**—The argument within the industry is: "Just how many days a year can we sell this more expensive stored natural gas?" You get a different answer from practically everyone in the industry.

• **Key Figures**—The transmission companies that have their eyes on the home heating market in the Northeast think they have the key to this fast-growing facet of the natural gas industry. It lies in these figures: In Denver, almost 60% of homes are heated by natural gas; in Chicago, it's about 33%; but in New York the figure stands at only a little more than 3%. **END**



Gold mine refuse + World's greatest tank lining job = Uranium

URANIUM now is being recovered from the yellow mountains of slimes residue surrounding the gold mines on the Rand in South Africa. The process involves treatment of the abrasive, spent ore with sulfuric acid. No small problem was the protection of the many tanks, pumps and miles of piping from the twin attack of acid and abrasion. The answer was the world's largest sheet-rubber tank lining job.

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INTERNATIONAL OUTLOOK

BUSINESS WEEK
SEPT. 3, 1955



The "spirit of Geneva" entered a time of testing this week. Before the year is out, the West should have an idea whether Soviet foreign policy is undergoing a basic shift or merely a change of decor.

In the United Nations, U. S. and Soviet disarmament plans are under debate. In Moscow, Chancellor Adenauer will lay down the West's policy on Germany next week. In October, the Big Four meet in another Geneva conference.

No one looks for fast, practical results from the series of diplomatic encounters. Problems of disarmament, and Germany, have been deadlocked for 10 years. Breaking the deadlock now will require sweeping changes in the Soviet Union's foreign policy approach.

If the next few months show that Communism's masters aren't ready for fundamental changes, "spirit of Geneva" optimism will fade fast.

The key to U. S. disarmament policy is the idea of inspection, the warning against sneak attack. Washington has dropped the remnants of the Baruch Plan, which aimed at controls over fissionable materials.

If some inspection plan can be agreed to, disarmament hopes will take on more luster. Other Soviet moves, such as troop reductions in Russia and the satellites, mean little or nothing by themselves.

Meanwhile, the Soviet "smile" policy continues unabated. At midweek, Russians talked of dispatching "tens of thousands" of their citizens to visit the U. S.

Washington has no intention of letting the sideshow of cultural exchange eclipse the main event—Soviet concessions on disarmament and Germany. Smiles are all right, of course. The U. S. will play along, use specific instances (as in the recent Soviet farmer tour and a projected junket of Soviet housing experts) to show how Russia might profit—if it really removed the Iron Curtain.

But there's a limit, and it may be approaching fast. Already the U. S. is trying to restrain the enthusiasts who act as if the East-West hatchet had been buried forever.

This footnote on "cultural exchange": The Soviet Academy of Science has decided to set up an institute for the study of modern capitalism.

Washington and London are deeply concerned lest the Mediterranean become the "soft underbelly" of the NATO alliance—as it was for the Axis during World War II.

Nearly seven years after the Palestine truce, Israel and Egypt are still on the warpath. There's a dramatic revival of Egyptian-Soviet relations, which will have repercussions elsewhere in the Middle East. Wayward Yugoslavia has loosened its ties with Balkan Alliance partners Greece and Turkey. And these NATO allies, Greece and Turkey, are themselves squabbling over Cyprus, the disputed British colony and a crucial NATO base.

Britain has accepted—in principle—self-determination for the Cypriots. Its main interest is to preserve the security of Cyprus military bases. There are, incidentally, many Communists on Cyprus.

Farther West, France is making a desperate attempt to save its—and NATO's—position in Morocco.

INTERNATIONAL OUTLOOK (Continued)

BUSINESS WEEK
SEPT. 3, 1955

The Mediterranean troubles explain Secy. of State Dulles' unprecedented offer: that the U. S. should unilaterally guarantee a "boundary of safety" between Arab and Israeli.

Suddenly, the pacification of the Mediterranean is urgent. The U. S. is prepared to shell out massive aid if that will help—for Arab refugees, even for development in North Africa, if any way can be found to funnel it in to the French protectorates.

—•—
The London market was in a tizzy at midweek. Rumors of another rise in the bank rate—soon—and worries over August gold and dollar reserve figures had the business community edgy.

Prime Minister Eden himself has appealed to the nation to help restrain the boom and thus preserve prosperity. His references to "further measures if necessary" were taken to mean a higher bank rate. It has been jacked up twice this year, stands at 4½% now. (Meanwhile, bank loans to good customers are at 5% to 6%.)

—•—
The sincerity of Pres. Eisenhower's trade policy is again being challenged—in virtually every world trading center. These are the developments that are bringing dismal talk abroad of a "new protectionism" in the U. S.:

- The Pentagon threw \$6.9-million worth of electrical contracts to American companies, though Britons bid substantially lower. The awards were considered a test of the recently liberalized Buy American policy (page 121).
- It was confirmed at midweek that the White House is considering a selective ban on foreign bidding for government contracts.
- The increase in bicycle tariffs rankles in Europe. Traders agree it will hardly bar sales but complain of the "principle of the thing."

The Administration denies it is developing a new protectionism. The Buy American award, it insists, was governed by considerations of unemployment. The bike tariff was a matter of law: The trade agreements act requires relief for any industry—however unimportant—Injured by imports. Officials add that the President will turn down the proposal to ban foreign bidders.

Beyond that, Washington points to the big postwar increase in U. S. purchases from Europe as proof that trade barriers aren't too high.

Whatever the merits of the case, U. S. trade relations are hurt.

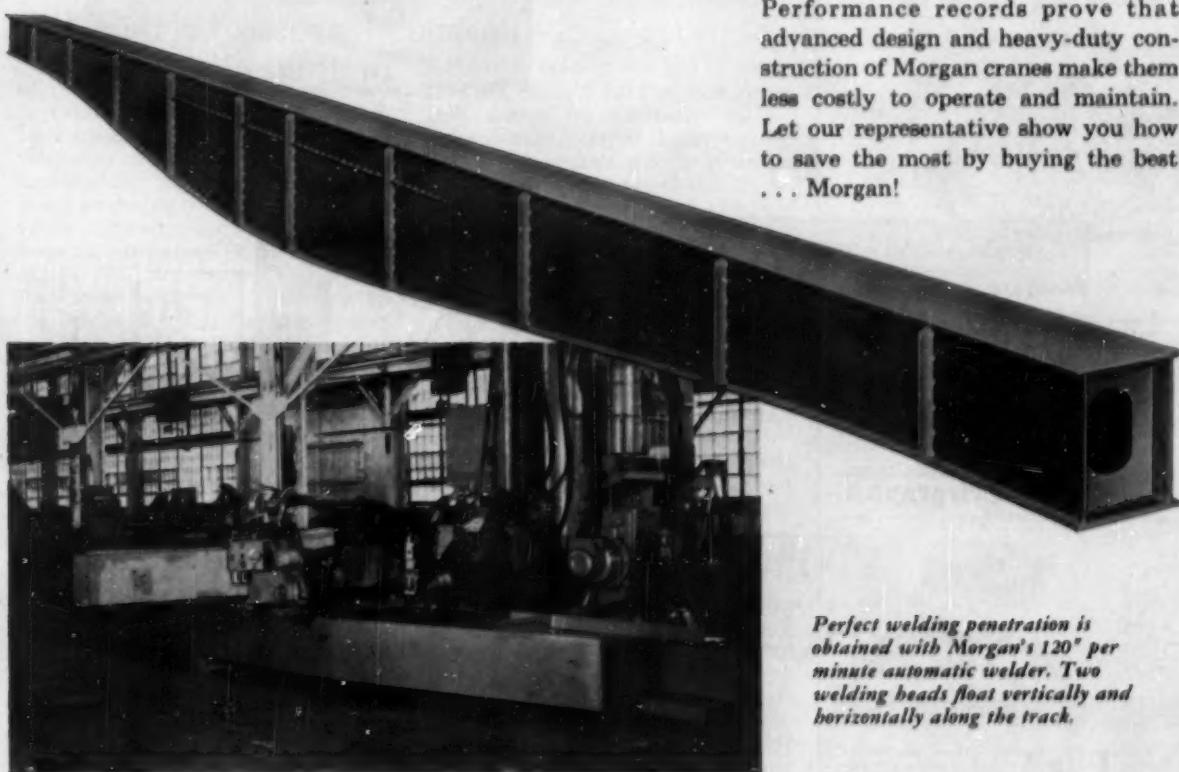
Washington's decisions will be seized upon by European protectionists, the men who are fighting to keep up the bars against dollar goods. The decisions place another mental block in the path of convertibility.

The damage, for all the hue and cry, is mainly psychological. It took eight years of U. S. preaching and example to sell Europeans on the desirability of competition and freer trade. That won't be undone overnight, or by a single set of decisions, however much U. S. practice collides with U. S. preaching—especially now, when Europe and U. S. are prosperous and busy.

The real effect on world trade will come from decisions on major matters still pending in Washington—customs simplification, oil quotas, the Organization for Trade Cooperation.

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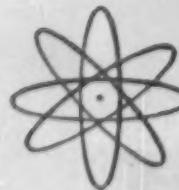
India

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To Humanity

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O PODER DO ATÔMICO
A ENERGIA NUCLEAR PODE DÁR AO BRASIL
UM TREMENDO EMPURRÃO



Japan

The Daily Telegraph

England

ATOM NATIONS SHARE
THEIR SECRETS

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有望な見通しつかず
ツと並び米のおあまり

JAPAN'S URANIUM RESOURCES:
Not a promising prospect
Unless Japan can depend on America's generosity

Sighting on Atom's Golden Age

The first International Conference on the Peaceful Uses of Atomic Energy provided a mighty stimulus—for everyone, not just the scientists (BW—Aug. 20 '55, p132). It gave the future of the tamed atom a new air of imminence, and urgency. A rush of developments is expected now, as politicians and businessmen lay plans for what the editorial writers call the "second industrial revolution."

Indeed, you can compare the events of the past year—capped by the Geneva atoms-for-peace meeting—with the beginnings of worldwide railroad building a century ago.

Last week, BUSINESS WEEK reporters called on men closest to nuclear problems in five nations, just as they were beginning to digest what they saw and heard in Switzerland. What were the reactions of their homelands to the promise of Geneva?

Three of the countries—Britain, Germany, Japan—are highly industrialized, leaders in world trade, and important competitors and customers of the U.S. Each has different capabilities, and needs, in an atomic world. Two—India and Brazil—are termed "underdeveloped." Yet there is much to be developed in these countries and all the

world is watching as these two attempt to raise the living standards of their peoples.

• **Gratitude**—It was an Indian official who told BUSINESS WEEK that his country "extends her thanks and gratitude to the big powers who made the Geneva conference possible, and thus gave her people the privilege of standing on the threshold of a golden age." The golden age will be some time coming, especially for India.

But India is working for it—harder now, and with more hope, than ever before.

Here, then, are BUSINESS WEEK's re-

ports on how five nations look at atomic power today:

LONDON—Despite the powerful U.S. showing at Geneva, which included the first private contract for the sale of a power reactor (BW—Aug. 27 '55, p43), Britons are unshaken in their belief that they lead the world in the practical development of civilian nuclear power. For them, cheap power is essential if they're to maintain a high standard of living on a crowded little industrial island that must export to buy food and raw materials. By 1975, British electricity consumption may rise fourfold. To meet that rise would require 100-million more tons of coal, or its equivalent in oil. Where to get it, how to pay for it, worries Britain.

Indeed, Britons are inclined to believe that they need nuclear power more than any other nation.

Sir Winston Churchill saw the threat of exhausted coalfields and high-cost imports several years back. He threw huge resources into atomic energy development. Now Britain has five reactors working, with plans for 22 large power-producing reactors in the near future. The estimated cost of electricity from nuclear stations (to be built, starting in 1957, for the state-run British Electricity Authority) will be 10% below that produced in the most modern coal-fired stations. Sir John Cockcroft, Britain's top atomic spokesman, says the cost will be halved when fast breeder reactors (producing more fuel than they consume) are in operation, in six to 10 years.

• **Orders**—Businessmen in metalworking, chemicals, electrical and electronic equipment, and engineering are highly excited about domestic atomic possibilities. They aim to give Americans a run for their money in world development. Four combines have organized for the design, development, construction, and sale of power reactors abroad. They claim to have 14 tentative orders (or at least "very serious inquiries") from overseas.

Britain has been worrying about its lack of native fuel for nuclear plants. Geneva helped dispel the fears, with indications that the world's dependence on uranium could well decline as the atom age progresses. (London investors are taking a decidedly less bullish view of uranium shares.)

On the minus side, however, many delegates at Geneva raised questions about Britain's techniques in reactor design—for example, the use of gas coolants, and the concentration on a simpler, though less efficient, reactor than Americans are working on.

Other revelations at Geneva struck Britons: the dangers that worldwide atomic development could bring—the appalling results of any explosion or

leak, the problem of radioactive waste disposal. Britons hope these dangers will spur closer international cooperation in supervision, technical assistance, and even in the economic policies that govern peaceful atomic development.

RIO DE JANEIRO—Brazil is bubbling with nuclear enthusiasm. Press coverage of the atomic future has been intense—stories about prospecting, the solution of the power shortage, and the breaking of the "shackles" on Brazilian industry. Brazilians-in-the-street follow the news avidly, and entertain the kind of romantic notions that marked the gold and rubber boom days.

Brazil's atomic experts are more restrained. But they, too, now see brighter hopes of putting atomic power to work. Geneva, they say, showed the way.

Brazilian development has been hobbled for years by the lack of power; cities like Rio and São Paulo are chronically starved for electricity. At the rate industrial demand is growing, hydroelectric resources will be exhausted soon. New thermal power stations are being added, but they burn expensive imported oil and coal. There's little of either in Brazil, and the nation spends nearly 80% of its dollar income on imported fuel.

Brazilians were elated by news that thorium, after all, may be one of the most easily utilized nuclear fuels. Brazil now claims the world's largest deposits; and prospecting is in the middle of a new surge.

• **U. S. Aid**—Rio is talking of increasing government spending on atomic projects, counting heavily on U.S. help. Washington and Brazil have just signed a bilateral atomic agreement (the kind the U.S. offered to 23 nations). One result will be Brazil's first reactor, a small experimental "swimming-pool" type. The two countries will share the cost, and the U.S. will supply the reactor, fuel, and badly needed technicians. Looking further ahead, companies like General Electric and Westinghouse have explored—however tentatively—the prospects for setting up nuclear power plants in Brazil.

Just how Brazil will finance the huge capital costs of its atomic future is something else again. For the time, at least, Brazilians seem hypnotized by the promise of the low cost of atomic electricity—once it is produced.

Americans, and many Brazilians, hope the attention atomic power is getting may take the spotlight off the touchy Brazilian oil situation. Maybe, they speculate, Brazil will modify its nationalistic determination to block foreign help in developing domestic oil—which would be urgent even if atomic power were available tomorrow.

The atomic future has produced some

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by *JOHN BROWN, BACON*



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mental reactor . . .

ATOMS starts on p. 114

typically Brazilian cynics, as well as optimists. They believe, probably correctly, that it will be a long time before Brazil has a producing atomic power plant.

BONN — Geneva tore the blinders from German eyes. Few believed that the big powers would really let their hair down on atomic matters. Most Germans pegged Geneva as a lot of "propaganda with few benefits." But now, the rush is on. Federal and state governments, cities, universities, and business corporations are feverishly setting out to narrow the gap between German atomic development and that of Britain, the U.S., and Russia.

The gap is wide; and, in the words of one observer, German atomics are a mess. There is no law, no central commission, no coordination. This fall, however, an atomic energy bill will probably be passed, setting out guidelines for government-private development, coordination of planning, research, and training of technicians — perhaps Germany's greatest single lack. (The law will follow the injunctions of the Paris treaties granting German sovereignty: no atomic weapons, only limited holdings of fissionable materials for two years.)

• **Production** — West Germany is dicker-
ing now with the U.S. for the purchase of a small experimental reactor, with fuels from the American stockpile. A second larger reactor will follow and probably will use German uranium. Heavy water will come from Farbwerke Hoechst, one of the I.G. Farben successors, which announced last week it would begin production within 18 months. Bayer, another Farben alumnus, is working on the processing of Black Forest uranium.

Germany feels it will have severe power problems, though perhaps not on the same scale as Brazil or Britain. If the present level of industrial activity keeps up, power resources will be pushed to the limits by the 1960s. State, local, and industrial power officials are immersing themselves in studies—and speculations—about German use of atomic energy. In Hamburg, a new research organization has begun studying applications of atomic energy to shipping.

• **Exports** — German businessmen, forever export-minded, realize that world atomic development will be big business. "Unless we are to be hopelessly left behind," runs a typical industry

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comment, "we had better get cracking and develop our own products and processes that are better and cheaper than those of our competitors." Germans admit they are far behind now, and that they must learn from the U.S. and Britain; but they're sure they can come up with methods that will make fresh contributions to atomic science—and put them in world competition.

Few Westerners—or Easterners, for that matter—will argue that point.

NEW DELHI—India's millions are hardly aware of the promise of Geneva. But India's leaders are keenly concerned. They've seen to it that India has an efficient, highly respected atomic energy establishment. Now, with the barriers of cold war and secrecy eased, they say the time has come for even underdeveloped nations to plan incorporation of atomic power into their energy pattern.

Indians dispute the thesis that only highly industrialized nations can afford, profit by, and master the complexities of atomic power generation. Despite staggering initial costs, Indians make a case for starting atomic plants as soon as possible, and insist that in the long run they will be more economical than conventional power plants.

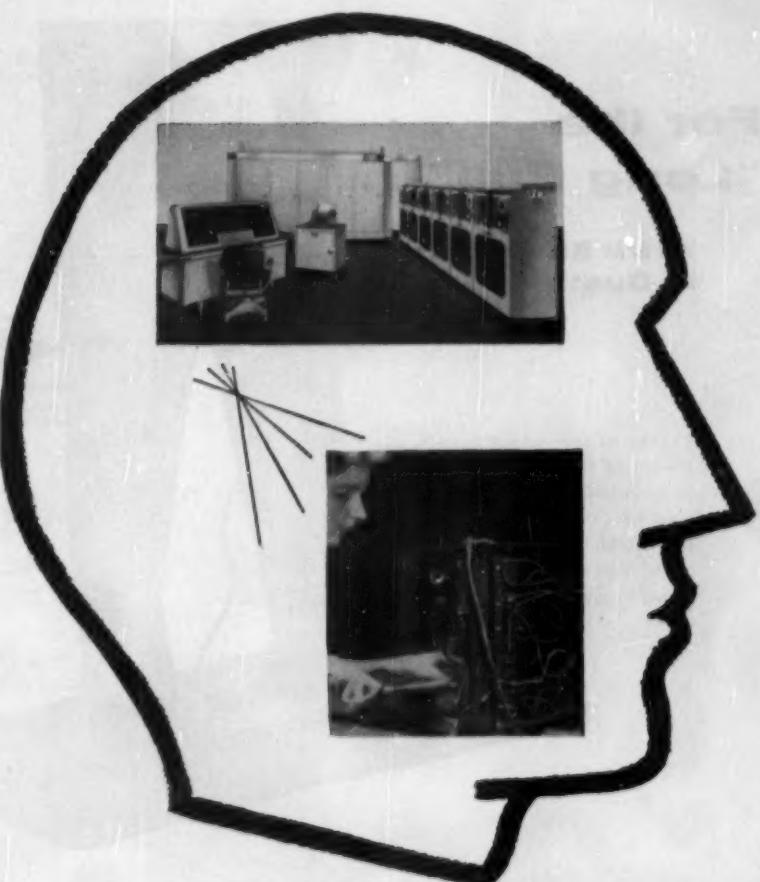
• **Sights** High—India has energy reserves, to be sure. Coal and hydro resources are probably enough to sustain a high rate of industrialization for three decades. But Indians are aiming higher, toward living standards comparable to the West's.

The potential of even the large hydro developments now planned or under way is limited. Prof. Homi Bhabha, the distinguished Indian scientist who presided at Geneva, notes that even full hydro development won't give India much more than one-seventh the energy now obtained by burning cow dung.

On the other hand, Indians have the thorium and uranium resources for extensive atomic development. And that's what they are planning.

Work is well along now on the so-called Bombay reactor, which Indians believe will be as useful as the U.S. "swimming pool" type. Its fuel probably will come from the U.S. or Britain. Another reactor, also Indian-designed, goes into construction by the end of the year. The Indian atomic commission has tentative plans for two power reactors, to be installed with help from foreign companies. Prof. Bhabha's post-Geneva visit to Russia raises the possibility that the Soviets will one day cooperate in Indian atomic development, just as the U.S. and Britain are expected to do.

Responsible Indians seem to realize that atomic power is no short-cut to industrial prosperity, U.S.-style. But



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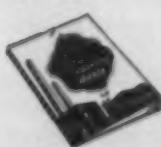
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". . . Japanese estimate atom power will halve cost of electricity in 1970 . . ."

ATOMS starts on p. 114

they do think of it as a means to skip a couple of rungs in the arduous climb toward something approaching a modern economy.

TOKYO —Just 10 years ago, at Hiroshima, Japan was kicked violently through the vestibule of the atomic age. Hiroshima left a psychological block—exploited by Communists and their friends—against all atomic development, military or peaceful. Only now, after Geneva, is the government determined to press on with Japan's long-delayed atomic program.

In October or November, Japan will seek from the U. S. its first small research reactor. Between 1958 and 1959, it plans to order three more, also from the U. S. And by 1961, Japan hopes to build its own.

It will be a long haul, reflecting Japan's late entry into atomics. It may be 15 years before Japan produces any atomic power. That will be none too soon: Few nations are as ill-endowed with natural resources as the Japanese.

• **Demand**—In 15 years, population is expected to grow by 18-million; power consumption to double to the equivalent of 200-million tons of coal. Coal and oil imports are expected to be terrific. Atom power, Japanese estimate, will halve the cost of electricity in 1970—and save the drain on foreign exchange.

Businessmen of highly industrialized Japan see many opportunities. They believe Japan has uranium, other nuclear fuels. They are now researching the possibilities of manufacturing heavy water. They see hope for Japanese precision industry in selling the pumps, control instruments, other equipment of the atomic age. They want to know more about radioisotopes and their uses. To these ends, a private business organization, cooperating with the government, will set up an atomic research institute next month. Later, the government will take it over as an official atomic commission.

Politics will continue to dog Japanese atomics. Leftwingers—including quite a few scientists—talk up the dangers of radiation to the people who know it firsthand. They insist that Japan pursue atomic development independently, with no foreign help or imports. But, barring accident or war, time is on the side of those who want to push ahead as fast as possible, thanks largely to the Geneva conference. **END**



Left to right, from top to bottom: McDonnell F-101; North American F-100; Convair F-102A; Boeing B-52; North American FJ-4, F-86D, and F-86H; Lockheed C-130; Douglas DC-7; Sikorsky S-56 and S-58.

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German Trusts Bloom

● The Allied Occupation failed to quash permanently Germany's traditional cartel system.

● Signs of a return to concentration of industry already are showing up in steel and chemicals.

● Latest indication is a budding bank combine.

With little publicity, but slowly and surely, Germany has reversed an Allied policy that tried after World War II to break down the country's traditional cartel system.

Last week, three German banks, successors to the prewar Deutsche Bank, set up a common profit-and-loss pool. The move is more than just another bank merger. It marks a new milestone in the reconcentration of postwar German industry.

Already West German companies are setting up the vertical trusts that existed in the steel industry—companies that handle coal mines, coking, iron production, steelmaking, and sometimes steel processing.

In chemicals, mergers of the successors to the prewar I. G. Farben trust haven't come about yet. But many chemical companies are working hand-in-glove on research and in overseas ventures to meet foreign competition.

• Side Deals—Sometimes these new amalgamations are arranged through back-door methods. For example, Friedrich K. Flick, one of the largest of the prewar coal and steel barons, was forced at the end of the war to sell out. Sidechar, a French company, bought Flick's coal interests. But with the proceeds, Flick purchased stock in Societe des Acieres et Trefileries de Neuves Maisons-Chatillon. Many in Bonn believe that this French company owns a majority of Sidechar shares. Thus Flick may be out to regain control of his former holdings.

• Score—There are a variety of reasons why Flick and other industrialists have been able to get back much of their prewar holdings:

• Much of the Allied decartelization was on paper only. Names were reshuffled, but the spirit behind the trusts remained—especially through interlocking directorates.

• German public opinion has never considered cartelism a bad thing. "Verbundwirtschaft"—joint economic control of coal, iron, and steel—is believed essential to the economy. Even trade unions feel that larger companies provide more security.

• The outbreak of the Korean War brought these sentiments into focus,

when the great demand for steel necessitated large new investments. And it is traditional in Germany that small savings are attracted mainly to larger industrial businesses. That's why German banks are prime movers behind the reconcentration process.

• Progress—Just what progress this industry reconcentration is making is shown in a rundown of some of the important mergers that have already taken place:

Hoesch, one of prewar Germany's biggest coal, iron, and steel producers, on June 21 merged with Altenessener Bergwerk and Industriewerke AG—both former Hoesch companies chopped off the parent firm by the Occupation. The new company resulting from this three-way merger just this month merged with Consolidation Bergbau AG into a new Essener Steinkohlenbergwerke AG. A majority of the shares in this company is held by Mannesmann, another remerged combine (BW-Jan. '55, p53).

Parts of the huge Vereinigte Stahlwerke (United Steel Works)—which prewar owned more than 20% of Germany's coal and which was split into 17 pieces by the Occupation—may soon be put together. So far, two of the 17 splinters have merged. Both companies are controlled by the widow and daughter of Fritz Thyssen, former German industrialist.

The famous Kloeckner concern is well on its way back to prewar status. Its successor has repurchased a majority of stock in a coal mine and it will shortly resume its prewar name.

• Chemicals—In the chemical industry, it's a somewhat different story. The former I. G. Farben companies—primarily Farwerke Hoechst, Farbenfabriken Bayer AG, and Badische Anilin und Sodaefabrik—have not announced any merger plans. But they have joint research and development projects, so that research will not be duplicated. They also are involved in joint investment projects abroad.

• Banks—This foreign investment—the export of capital—has been one of the principal causes of the rebuilding of the "grossbanken" of prewar days. The Occupation law that split up these banks was elaborate. It broke up the

three monopolistic banking systems into 12 principal companies.

Now an effort is under way to regroup most of the banks into three combines with total assets of \$3½-billion. That would include all but three West German banks, and their total assets are less than \$1-billion.

Last week's move to create a joint profit-and-loss pool by the Norddeutsch Bank, Rheinisch-Westfälische Bank, and the Suddeutsche Bank will unite the banks in all but name. They already have been cooperating for some time in a number of ways from joint financing of exports to joint publication of annual reports. Bonn observers believe it is only a matter of time until Allied restrictions are allowed to lapse and West German legislation separating the banks is amended.

• **Impetus**—One thing that may speed the reconcentration program is the fact that in some cases even the paperwork of the Occupation decartelizers wasn't carried out.

A good example is what happened to the Krupp steel and coal empire. Krupp was ordered to give up all his coal, iron, and steel holdings. The German government bought one mine. Now there is strong pressure for the government

to divest itself of such holdings. Another big mine has been on the market, but its sale to the Italian State Railways didn't go through (BW—May 14'55, p160). Krupp was given two-and-a-half years to sell out. Now the time is up, and Krupp is agitating to hold on to his properties.

• **The Trend**—All this doesn't mean that German industry is headed straight back to the days when it helped finance the overthrow of the Weimar Republic and helped bring on the Nazis. But how long Finance Minister Ludwig Erhard and others in the government who oppose the cartels can block these new consolidations is debatable.

It's true that many of today's industrialists had strong Nazi party ties before the war. But so far they have limited their financial support to political parties such as the rightwing groups in Prime Minister Konrad Adenauer's Christian Democratic Union and the Free Democrats.

Furthermore, while Erhard and his liberal theories of competition (BW—Nov. 7'53, p156) have failed to halt reconcentration in heavy industry, they have prevented government encouragement and participation in monopoly—unlike in Japan (BW—Aug. 13'55, p62).

Buy American: Under Fire Again

English Electric entered the low bid, but two American companies won the contracts.

The Administration has stirred up another tempest over its foreign trade policy—this time in the "Buy American" field. The storm arose when the Defense Dept. awarded \$6.9-million worth of contracts, for generators and transformers, to American companies despite the fact that English Electric Co., a British firm, was low bidder. The equipment is intended for the Chief Joseph Dam in Washington.

Simultaneously, it was learned that the White House was considering a proposal by Secy. of Commerce Sinclair Weeks for a selective ban on foreign bidding on government contracts (page 111).

Chief Joseph was the first major test of the more liberal "Buy American" regulations issued by Pres. Eisenhower last December as part of his "trade not aid" policy (BW—Dec. 25'54, p54). The Buy American Act of 1933 required the government to purchase from American firms unless their prices were "unreasonable"—usually interpreted as over 25% higher than foreign prices. Last year Eisenhower announced that foreign firms should get contracts if their prices, including tariff and costs, were 6% or more below domestic bids. English Electric's bid on the Chief

Joseph equipment met this standard.

• **Relieves Unemployment**—The Eisenhower order, however, left agency chiefs wide discretion to reject low foreign bids if this action would relieve U. S. unemployment, stimulate small business, or simply promote the national interest. Defense Secretary Charles E. Wilson cited the unemployment provision in awarding the Chief Joseph business to Westinghouse Electric Corp. and Pennsylvania Transformer Co. Both companies will produce the equipment in the Pittsburgh area—certified by the Dept. of Labor as an unemployment region.

The British government has officially protested the decision, and critics of the action at home and abroad charge that it reflects a protectionist trend, despite high-sounding talk of liberalizing U. S. foreign economic policy. They linked it to the recent 50% boost in the tariff on lightweight bicycles and Administration moves to cut watch imports.

• **Second Time**—This is the second time English Electric has lost out to Westinghouse on equipment for Chief Joseph. The British company was low bidder for two generators and ten transformers in 1953. **END**

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In Business Abroad

Political Unrest in Morocco

Deals Heavy Blows to Economy

Behind the headlines of terrorism, massacres, and rioting in Morocco (BW-Aug.27'55,p120) is the devastation that two years of political unrest have inflicted on the economy. Retail bankruptcies in Casablanca have reached the hundreds as a result of political boycotts of French goods. The city's building boom has fizzled—from \$3.4-million a month in 1954 to \$800,000 a month during the first seven months of this year.

Last week's rioting was the final blow: Khouribga, the world's largest phosphate mine, employing 9,000 workers, was smashed. Damage totals somewhere between \$3-million and \$4-million. And at Ait Amar, Morocco's principal iron mine, rioters used dynamite with precision to destroy the mine's most valuable equipment. Khouribga will be completely out of production for two months and it will be more than a half year before normal production is restored.

Mannesmann Hopes to Float Bond Issue in Switzerland

If current negotiations with a Swiss Bank succeed, Mannesmann AG of Dusseldorf, West Germany, will be the first German company to float a bond issue abroad since World War II. According to press reports, Mannesmann, one of Germany's largest coal, iron, steel, and steel processing combines (page 122), will seek more than \$9-million in Swiss francs through 4½% bonds. They will be convertible at a later date to regular Mannesmann shares (BW-Jul.16'55,p120).

There are murmurs of discontent in Swiss financial circles. Swiss banks would rather make direct loans, as they have been doing with considerable success since the end of the war, than have bonds floated in their backyard. Swiss financiers believe Mannesmann's success with a bond issue would break the ice for a number of other West German companies seeking foreign capital.

Uncertainty Over Exchange Rate In Brazil Affects Coffee Market

At midweek, Brazil importers and exporters were still holding their breath for a new exchange law that the government originally promised for Aug. 20. Brazilian speculators have exploited the situation, taking every one of Finance Minister Whitaker's statements for a ride in the press.

This uncertainty is having its effect in the coffee market and has caused a price increase. Both producers

and New York buyers are holding off trading in coffee, waiting for the exchange situation to quiet down. Sales that are being made are at higher prices.

Meanwhile, there's lots of talk in Rio about the upswing in trade with the Communist bloc. The Foreign Office says it may initiate direct trade talks with Russia and its satellites. In the last few months Brazil has sent Russia a half million dollars worth of sugar, hides, and nuts to Poland, and iron ore to Czechoslovakia.

Overseas Investments Are Up, But Earnings Lag Behind

Figures released by the Dept. of Commerce on overseas U. S. investments (BW-Aug.27'55,p128) reveal one interesting paradox: Despite the fact that new investments last year hit a record figure, earnings are not up.

Since 1950 the U. S. has invested \$9.4-billion abroad. Yet earnings—at \$2.5-billion in 1954—were barely above 1950 levels.

There were some ready explanations for this fact. One is that many of the new investments still are so young that they haven't borne fruit. Many of them, for example, are in raw materials production, which often requires lengthy prospecting and development. And then the same old hazards in the foreign field—currency depreciation, higher taxes, discriminatory exchange rates—still cut down earnings in a number of countries.

Business Abroad Briefs

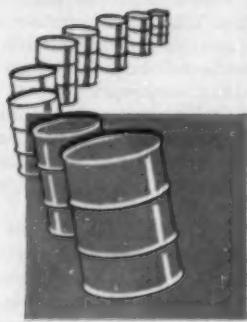
Mexico is headed for its best year ever, Pres. Adolfo Ruiz Cortines says in his annual report to the nation. Mexico's hard currency reserves have soared past \$350-million—with every expectation that they will go higher (BW-Apr.23'55,p118).

International Business Machines Corp. has packed its 100th electronic brain off to Paris where it will be used as part of IBM's new French data processing center. IBM also has plans to later manufacture the machines in Europe.

India has accepted a British steel mission's proposal to build a \$230-million plant, the country's fourth (BW-Mar.12'55,p166). Meanwhile, the head of the house of Tata, J. R. D. Tata, leaves shortly for the U. S. to complete negotiations with the Export-Import Bank for a loan to expand Tata's steelmaking facilities (BW-May21'55,p156). . . . New Delhi is reported considering a joint Indian-Iranian-French proposal to build a \$42-million refinery on the West Coast.

Abitibi Power & Paper Co., Ltd., Canada's largest home-owned paper company (1954 sales: \$114-million), has announced plans for its first plant in the U. S.—at Alpena, Mich.

Hoesch, one of West Germany's largest steel producers (page 122), will build a 3-million steel pipe plant in Saskatchewan. It follows the earlier move of the West German firm Mannesmann, which is building a 20-million pipe plant in British Columbia (BW-Jul.16'55, p120).



Trading Water for Oil

In Southern Illinois, over twenty oil companies have wells in the 10,000 acre Lake Centralla-Salem oil field. When production in this field dropped off, these companies banded together and decided to water-flood the field by pumping water underground through former oil producing wells to force more oil to move to the remaining wells.

What happened? The amount of oil produced has been greatly increased. Today, one well that

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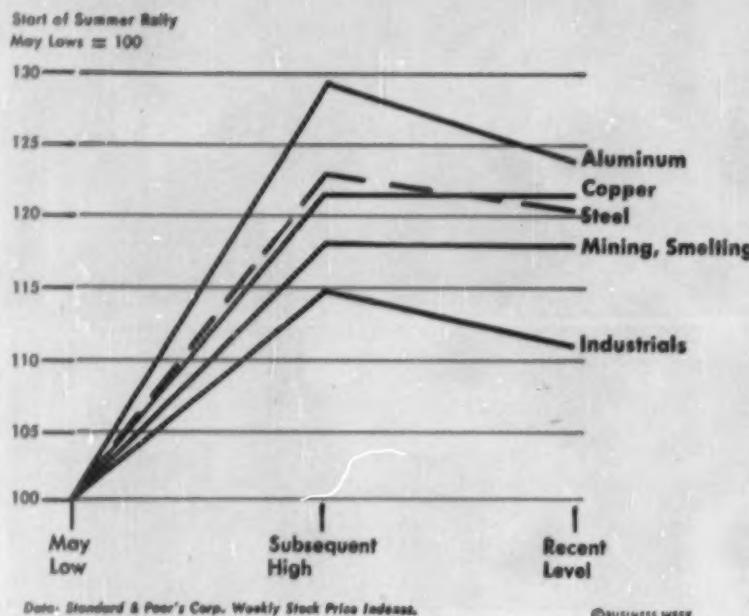
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THE METALS: MARKET FAVORITES



Pacing the Latest Rally

The stock market's latest price flurry is still following the familiar 1955 rally pattern. It's selective rather than an across-the-board gain. This Monday and Tuesday, for example, as many stocks closed each day with losses as with gains.

Among the steadiest performers in this churning of prices have been the metal stocks. In this year's traditional summer rally (chart, above) they sailed far higher than most groups. Although the rally ended a month ago, they still haven't settled down to the general level. The metal groups continue to lead the pack by a wide margin.

• **Copper Spurt**—Wall Streeters are inclined to credit the copper group for much of the impetus of the current rally. Certainly, stocks had been backing and filling in a desultory manner until Anaconda's shares gave the market a shot in the arm. Anaconda bounded to a new high early last week (BW—Aug. 27 '55, p142).

An equally bullish factor can be found within the copper trade. Late last week, copper prices jumped again (for the fourth time this year) to 43¢ a lb. That's copper's highest posted

price in 83 years, and there were reports that price scalpers had been making sales to badly squeezed users of the metal at levels as high as 52¢ a lb.

• **Other Metals**—Traders looking for a chance to make a quick buck haven't been concentrating wholly on the copper shares. They are aware that shortages have been showing up elsewhere in metals generally (BW—Aug. 20 '55, p142) and in steel and aluminum particularly. Thus, many recent big price gainers can also be found outside the copper group.

For example, Kaiser Aluminum can boast of a gain of 48% since the summer rally started last May—matching the gain posted by Anaconda in the copper group. In the same period, Reynolds Metals has risen 43%. U. S. Steel and Jones & Laughlin Steel have gained 39% each.

• **Discordant Notes**—Not all Wall Streeters, however, have been lulled by the continuance of the metals bull market. Some of them recall that the copper issues, more often than not, have been tailenders or late movers in a general market advance. This touch of his-

tory makes some students of the market uneasy, even though it has been drummed into them for months that the present bull market is "vastly different from any earlier market."

Moreover, many in the copper trade—the leader of the rally—confess to a bit of uneasiness in the midst of the greatest prosperity in the industry's history. Executives of copper companies have been quoted as saying they are "greatly disturbed by the latest price advance—it may start copper users seeking out cheaper substitutes."

On the other hand, you can find just about as many copper traders who see no such danger. They argue along these lines: "There's just too much demand now for copper, and too many places where it simply can't be replaced by any substitutes, for the industry to have reason to worry. What's more, copper is gaining more new users than it is losing to cheaper metals that are in more plentiful supply."

New SEC Rules

They're steps toward stricter regulation of proxy fights, more information in securities advertising.

Explicit new rules for proxy fights and slightly relaxed rules for the advertising of new security issues have come out of the Securities & Exchange Commission in a busy week or two. This week, SEC also released its proposed registration forms for offerings of depository receipts that U. S. banks issue against securities of foreign corporations.

Until Sept. 30, SEC will hear views and comments on the proxy rules and the registration forms for offerings of depository receipts. After that, the commission will have time to make amendments before putting the innovations into effect.

• **Proxy Fights**—SEC had long promised to tighten up regulations covering proxy battles, which rank among the day's hottest corporate subjects. The newly proposed rules have been designed to give the man in the middle of such fights—the stockholder who is bombarded with propaganda by both sides—more information, and more accurate information, to guide him in his proxy decision.

The chief effect is to make the rules more specific. For example, the existing rules merely ban false and misleading proxy statements. The new rules spell out the practices that violate the SEC code. These practices include:

• Predictions of how the stockholders will be affected financially by

the victory of either side that's appealing for support.

• "Irrelevant statements" that tend to confuse or mislead stockholders.

• Statements "without foundation" that impugn a man's character or reputation.

• "Unsupported accusations or innuendos" and any statement that isn't factual.

• **Full Disclosure**—The new rules say, too, that management must immediately, upon request, send the opposition's material to stockholders, or supply the opposition with the names of stockholders—provided the request is made not more than four months in advance of the shareholders' meeting. Under present rules, management can delay such steps until it is ready to send out its own material.

Both sides will be required to make full disclosure of such facts as these:

How proxies will be solicited and by whom; how much this solicitation will cost; who's paying for it; whether or not the person or group paying for the solicitation will ask reimbursement from the company after winning the battle; whether or not any payment of such costs by the company will first be submitted to the stockholders for their approval.

• **Securities Advertising**—Up to now, SEC has given little scope for the advertising of new security issues. In fact, the only permissible form of advertising is the so-called "tombstone ad." This low-pressure type of ad merely records the fact that a new offering has been registered, with the scantiest of details: the name of the company involved, the security being offered, and the places where information on the new issue can be obtained.

This approach to promotion is chiefly due to the securities law that says the first written communication of an offer to sell a new issue must be preceded or accompanied by a prospectus. That's to make sure the prospective investor is provided with all pertinent data, so he can invest safely.

SEC's new rules will permit a limited form of advertising of new issues both before and after the effective date of registration statements. They don't open the doors to any vigorous sales pitch, but they do permit a brief description of the offering company's business, information about the pricing and underwriting of the new securities, and a statement of whether the offering is made by the company itself or in behalf of stockholders who wish to sell.

This liberalization, says SEC Chmn. J. Sinclair Armstrong, "should be particularly helpful to small investors and to small underwriters and dealers who are not located in the large capital markets."

Wall St. Talks . . .

... about what the stars reveal . . . tight money, again . . . king-size corporate financing.

It's in the stars—"an old-fashioned 'he-panic' . . . a regular Panic to end all Panics. You can expect it certainly in the fall, about Oct. 1 (give or take a month)," says "Dr." J. Arthur H. Walker, who identifies himself as a "Master Astrologer" (with an honorary doctor's degree from Ireland). After "computation of 400 years of financial panics in the U.S. and Europe," he says the next depression "will make 1929 look like child's play."

How much longer will money rates be allowed to tighten? That's the \$64,000 question in Wall Street's badly shaken municipal bond market (BW—Aug. 27 '55, p95). Some dealers see a return to softer credit not too far away. Their reasoning: The Fed must be aware that any further sharp increase in rates will materially slow the pace of borrowing by state and local governments and thus impair an important segment of the economy.

King-size corporate financing expected soon: \$50-million bonds, Tennessee Gas Transmission; \$35-million bonds and \$25-million preferred stock, Public Service Electric & Gas; \$30-million bonds, Southern Bell; \$25-million bonds, New York State Electric & Gas; \$18-million bonds, San Diego Gas & Electric; \$17-million bonds, Ohio Power; \$15-million bonds, Utah Power & Light. Kaiser Aluminum & Chemical is also reported planning to sell \$35-million of preferred publicly and \$40-million of bonds privately.

Tight money conditions have other effects than the direct cost of bank borrowings, corporate treasurers are learning. Besides higher interest rates, many banks also demand that borrowers maintain larger balances than heretofore. It's a move to increase their supply of loanable funds.

Market letter gleanings: "The market recovery is approaching levels at which more resistance is likely to be encountered." (Orvis Bros. & Co.) . . . "Based on probabilities, there seems little reason to change the policy of lightening commitments in periods of strength." (Walston & Co.) . . . "The major trend of stock prices is still up." (Bache & Co.) . . . "Evidences of investment buying have appeared again." (Laidlaw & Co.)



Rings welded from
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Instead of **THIS BAR**



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on a single order of
flash-welded rings

Substitution of a mill-rolled section for a forging previously used, cut the weight of a rough ring 114 lbs.

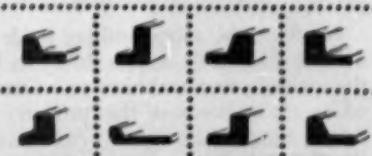
Combined material and machining savings realized in the finished ring amounted to \$201.15 per ring—a total of \$112,084.00 on a single order.

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Find Out What
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**AMERICAN
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In Washington

Agriculture Puts Surplus Spuds Into Its Price Supports Bag

For the first time since the big potato scandal of 1950, federal price supports are available on surplus potatoes.

This year's crop may hit 40-million bu., or about 8-million bu. more than consumers are likely to buy. Until Agriculture Secy. Ezra T. Benson stepped in, potato growers feared a serious price break this fall.

Benson's idea is to maintain prices through a two-step plan: Sell only higher grades in commercial channels at open market prices; divert lower quality potatoes to starch, feed, and flour, with the government subsidizing growers and dealers for part of the "loss" incurred by such sales.

The subsidy rate will start at 50¢ per hundred pounds this fall and scale down to 30¢ next spring.

There are some major differences between this potato program and the 1950 one that incited public wrath as millions of bushels (dyed blue to keep them out of commercial channels) rotted.

In 1950, supports were mandatory. The government had to buy whatever amounts growers could raise. This year, the government will take possession of not a single bushel. It offers support only on a limited portion of the crop, and at rates determined not by Congress but by Agriculture Dept. experts.

Sidelight: There will be no blue-dyed potatoes in 1955. But, to keep subsidized spuds out of grocery stores, the government will insist that they be chopped up—the first step in preparation for starch, feed, and flour milling.

Subcommittee Charges That TV Is a Prep School for Delinquency

Senate investigators say the Federal Communications Commission should regulate the content of children's programs on television.

This is a major recommendation of the just-published interim report on Television and Juvenile Delinquency. It is based on a series of hearings conducted earlier this year by the subcommittee to investigate juvenile delinquency. The group is headed by Sen. Estes Kefauver (D-Tenn.).

In effect, the subcommittee holds that FCC has been evading part of its responsibility to the public by taking the attitude that technical and financial aspects of television are its business, that program content is not.

The tone of the report sympathizes with the view of Dr. Ralph S. Banay, one of the subcommittee witnesses who is a research psychiatrist at Columbia University: "If the proverb is true that prison is college for crime, I believe, for young disturbed adolescents, TV is a preparatory school for delinquency."

The subcommittee says FCC should set minimum standards "in terms of prohibiting the presentation to children of certain materials in such manner as to be damaging to them and . . . criteria as to what constitutes balance in programming."

Army Unleashes Its Imagination In Search for "Radical" Weapons

The Army moved into new ground this week in the search for new weapons.

Army Secy. Wilber M. Brucker assigned "highest possible priority" to weapon research and set up a new office to take over the program. He chose William H. Martin, former executive of Bell Telephone Laboratories, Inc., director for research and development.

The Hoover Commission is credited with at least an assist. A commission task force on military research complained last spring that all the armed services lacked daring and imagination in looking for radical new weapons. It said each service—Army, Navy, and Air Force—should have an Assistant Secretary for research.

Brucker gave Martin a lesser title, but the Pentagon announcement said Martin will have "the same degree of responsibility as that given to an Assistant Secretary . . . reporting directly to the Secretary of the Army."

Agencies Take Flood Victims Under Their Financial Wings

Here's what Washington is doing for New England flood victims:

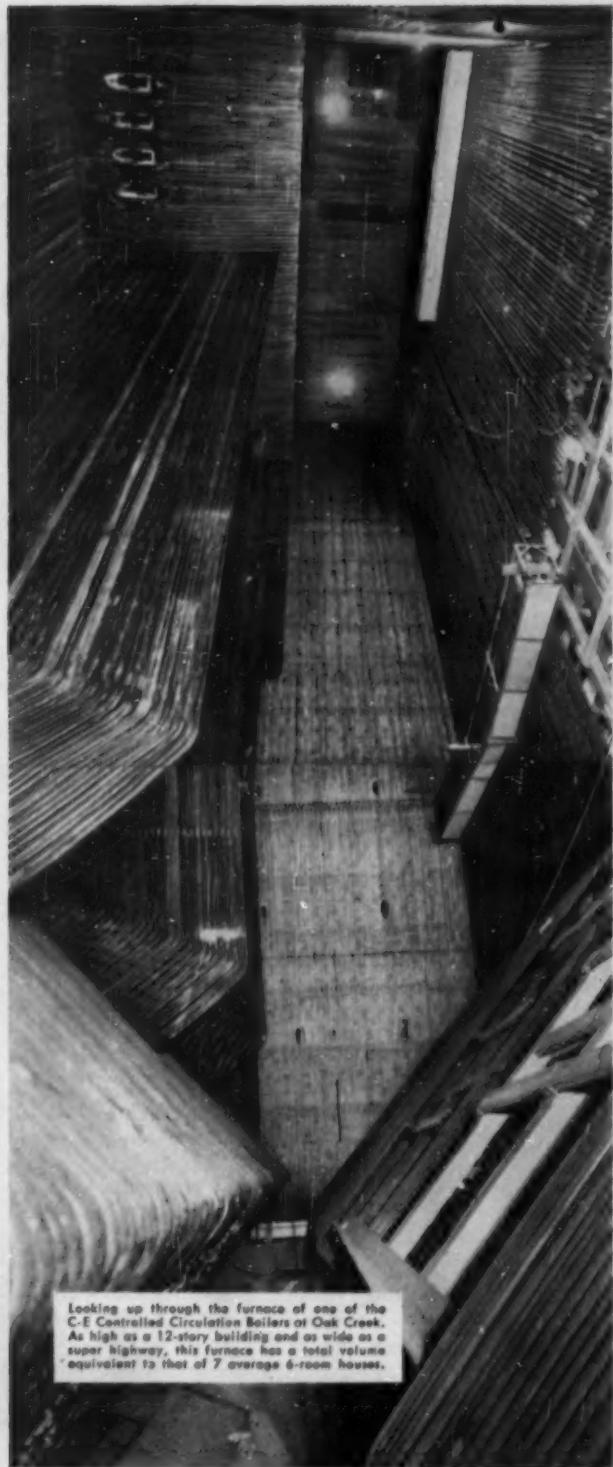
Small Business Administration is granting special disaster loans for "reconstruction, rehabilitation, or replacement" of facilities damaged by flood waters. Loans will be made up to 10 years on businesses—no matter the size or industry. Interest rates will be 3%, considerably below SBA rates for regular government small business loans and commercial rates.

SBA has set up 15 emergency offices in Connecticut, Rhode Island, New Jersey, Massachusetts, Pennsylvania, New York, and Delaware, in addition to its regular offices in those states. The emergency offices are authorized to grant direct loans up to \$20,000; the regular regional offices up to \$50,000.

Office of Defense Mobilization has authorized rental of idle government-owned machine tools and other equipment to crippled factories—both defense and nondefense. The government, mainly the military services, has at least 100,000 idle tools available. Monthly rental rates will be 1% of the tools' acquisition cost. Shipping and installation costs will be charged to the lessee. Tools will be leased only for the time required to replace or repair flood-damaged equipment.

ODM also will grant priorities to damaged facilities for procurement of building materials.

Additional government aid is available for defense or defense-supporting plants—any facility producing goods or services covered by the 200-odd expansion goals set up



Looking up through the furnace of one of the C.E. Controlled Circulation Boilers of Oak Creek. As high as a 12-story building and as wide as a super highway, this furnace has a total volume equivalent to that of 7 average 6-room houses.

Wisconsin Electric Power Company

A STORY OF PIONEERING

In the annals of America's great industrial achievements, a few names stand out. They are the pioneers, the companies whose work has advanced technology in major steps. Such a company in the field of power generation is the Wisconsin Electric Power Company. Its first big pioneering step was taken 35 years ago when it built . . .

A power plant that made Milwaukee famous

In 1920, the use of pulverized coal as a fuel for boilers was virtually unknown in the utility industry. Wisconsin Electric, after 5 years of development work in an older plant, took the bold step of designing a large new power station (the Lakeside Station) for the exclusive use of pulverized coal. Lakeside not only proved the practicability of pulverized coal but became the world's most efficient power station. Power engineers from all parts of the country and abroad came to Milwaukee to observe and learn. Pulverized coal made a major contribution to the economy of power generation and has long since become the universal method of burning coal in electric power stations.

Wisconsin Electric took its next big forward step in 1930 when it started construction of its Port Washington Station.

Port Washington set new efficiency record

Port Washington was unique among American power stations in that it not only set a new efficiency record during its first years of operation but maintained its position as the world's most efficient power station for 3 years. It had other claims to fame as well. Its boilers were the largest high-pressure boilers then built and established new reliability records in service.

And then came Oak Creek

Now Wisconsin Electric has erected another landmark on its "road of achievement" with its new Oak Creek Station, placed in service in late 1953. Oak Creek, like its famous predecessors in the Wisconsin system, introduces important innovations in design and is noteworthy among the outstanding power stations of today.

And what is Combustion Engineering's part in the Wisconsin Electric story? Just this. Combustion pioneered pulverized coal burning from the manufacturer's side, and designed and built all the pulverized coal equipment installed at Lakeside, Port Washington and Oak Creek. It supplied the boiler units installed in the Port Washington Station. And at Oak Creek, Wisconsin Electric now has in service two of Combustion's most advanced type of controlled circulation boilers, with a third being installed.

Wisconsin Electric, pursuing its forward looking policy, was among the first to recognize the special advantages of the controlled circulation boiler which, in the past five years, has achieved an acceptance by utilities never before accorded a basically new design.

8-56

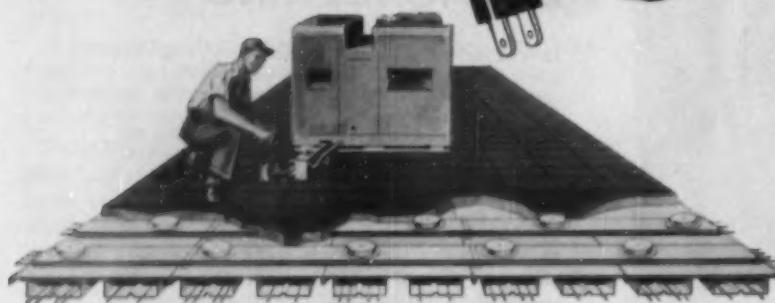
COMBUSTION ENGINEERING

Combustion Engineering Building • 200 Madison Avenue, New York 16, N. Y.



BOILERS, FUEL BURNING & RELATED EQUIPMENT; PULVERIZERS, AIR SEPARATORS AND FLASH DRYING SYSTEMS; PRESSURE VESSELS; AUTOMATIC WATER HEATERS; SOIL PIPE

INSTALL OFFICE MACHINES
ANYWHERE . . . WITH
ELECTRIFLOOR



... because this structural floor system has
unlimited electrical availability built right in!

The growing use of electrical office equipment can create a problem in planning your new office building. There's no way to predict what kind of machines you may need, where you'll need them, or what their power requirements will be. New equipment could mean expensive alterations five, ten or twenty years from now. That's why many architects and businessmen solve this problem before it becomes one by planning new buildings with Fenestra's Electrifloor.

The cellular design of the Electrifloor building panels makes electrical, phone or intercommunication outlets available in any or every square foot of floor space from the day you move in . . . for the life of the building. Header ducts on top of the panels make every one of the large area cells available—any time—for additional wiring. Only cellular panel design provides this unlimited electrical flexibility.

You can install new equipment, move

desks and partitions, or completely change office layouts without the time, trouble and expense of tearing up floors and walls to provide additional electrical service. All that must be done is drill a hole, pull the wires up and make the connection.

And, your building actually costs less, compared with other construction methods, because Electrifloor forms the structural subfloor as well as the electrical raceway system. The unique design combines such light weight and fast erection with such great strength that structural steel and foundation costs are reduced and your building is completed faster.

Investigate Electrifloor for your new office building. To utilize all of its advantages, your building should be designed around it. Get complete details, now, before you start your plans. Write Detroit Steel Products Co., Dept. BW-9, 3425 Griffin Street, Detroit 11, Mich.

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ELECTRIFLOOR . . . chosen for these modern buildings



GENERAL TELEPHONE CO., San Jose, California; **Architect**: Albert C. Martin & Assoc.; **Contractor**: George A. Fuller Co.; **Header Duct**: National Electric Products Corp.



STATE OFFICE BUILDING, Pittsburgh, Pennsylvania; **Architect**: Altenhof & Bowm; **Structural Engineer**: George Levinson; **Electrical Engineer**: Carl J. Long; **Contractor**: Navarro Corp.; **Header Duct**: National Electric Products Corp.



PENNSYLVANIA THRESHERMAN & FARMERS INSURANCE CO., Harrisburg, Pennsylvania; **Architect**: Edmund G. Good; **Contractor**: Ritter Brothers; **Header Duct**: National Electric Products Corp.

after Korea. Such companies can get (1) accelerated tax amortization on costs to repair damaged facilities, and (2) defense loans from the Treasury Dept. These loans, however, will be made at interest rates higher than SBA's disaster loans.

Businessmen can get details on all these programs from the nearest SBA or Commerce Dept. office.

• • •
**CAB Decision Sets Off
New Airline Competition**

There may be more airline competition on routes between South and Southwest cities and cities in the Northeast.

This week, a Civil Aeronautics Board examiner handed down a decision that:

- Gives American Airlines a route from New York to Houston via such cities as Washington, Pittsburgh, Nashville. This competes with Eastern Airlines' New York-Houston service.

- Gives Eastern a route from Ft. Worth-Dallas to New York via such cities as Nashville, Pittsburgh, and Washington. This competes with American Airlines' existing service via Washington.

- Gives Capital Airlines a through route from New York to New Orleans via Washington and Atlanta, removing restrictions that now keep Capital from competing effectively with Eastern over this route.

- Permits Trans World Airlines to serve Tulsa and Oklahoma City on its transcontinental route, competing with American's similar service.

Losers in the big route case, which has been under consideration for a couple of years, include Delta-C&S Air Lines, Braniff Airways, National Airlines, United Air Lines, and two non-skeds, North American Airlines and Aero Finance Corp.

Actually, the five-man Civil Aeronautics Board will have the final say on the routes, but winners and losers alike will get a chance to have their say in oral arguments. A decision isn't likely before yearend.

CAB could use the case to set new policy if it wants to build up some of the smaller carriers by giving them new routes that the examiner handed to larger competitors.

Whenever you select a power unit, don't put a straight-jacket on your ideas . . . consider ALL of the possibilities of modern power drives.

For example consider the many useful combinations that can be secured with the basic Master power units shown below. They're designed so they can be easily combined together to give you the RIGHT horsepower, the RIGHT shaft speed, the RIGHT features in one compact unit that you can use RIGHT where you want it. Nowhere else will you find power units that are so flexible, so easily adaptable, and in such a wide range of types and ratings.

Master power drives are available in thousands and thousands of ratings (1/8 to 400 HP) . . . in open, enclosed, splash proof, fan cooled, explosion proof . . . horizontal or vertical . . . for all phases, voltages and frequencies . . . in single speed, multi-speed and variable speed types . . . with or without flanges or other special features . . . with 5 types of gear reduction up to 430 to 1 ratio . . . with electric brakes . . . with fluid-drive . . . with mechanical or electronic variable speed units . . . and for every type of mounting . . . Master has them all and so can be completely impartial in helping you select the one best power drive for YOU.

THE MASTER ELECTRIC COMPANY • DAYTON 1, OHIO



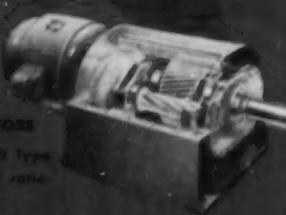
FLUID DRIVE
2 to 20 horsepower



1/8 TO 400 HORSEPOWER



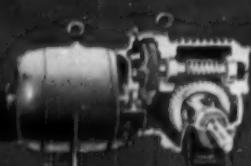
SHAFT MOTORS
Either Magnetic or
Dynamic Types



GEARMOTORS
Parallel shaft type
up to 130:1 ratio



SPEEDRANGE
For mechanical or
electronic controlled
variable speed

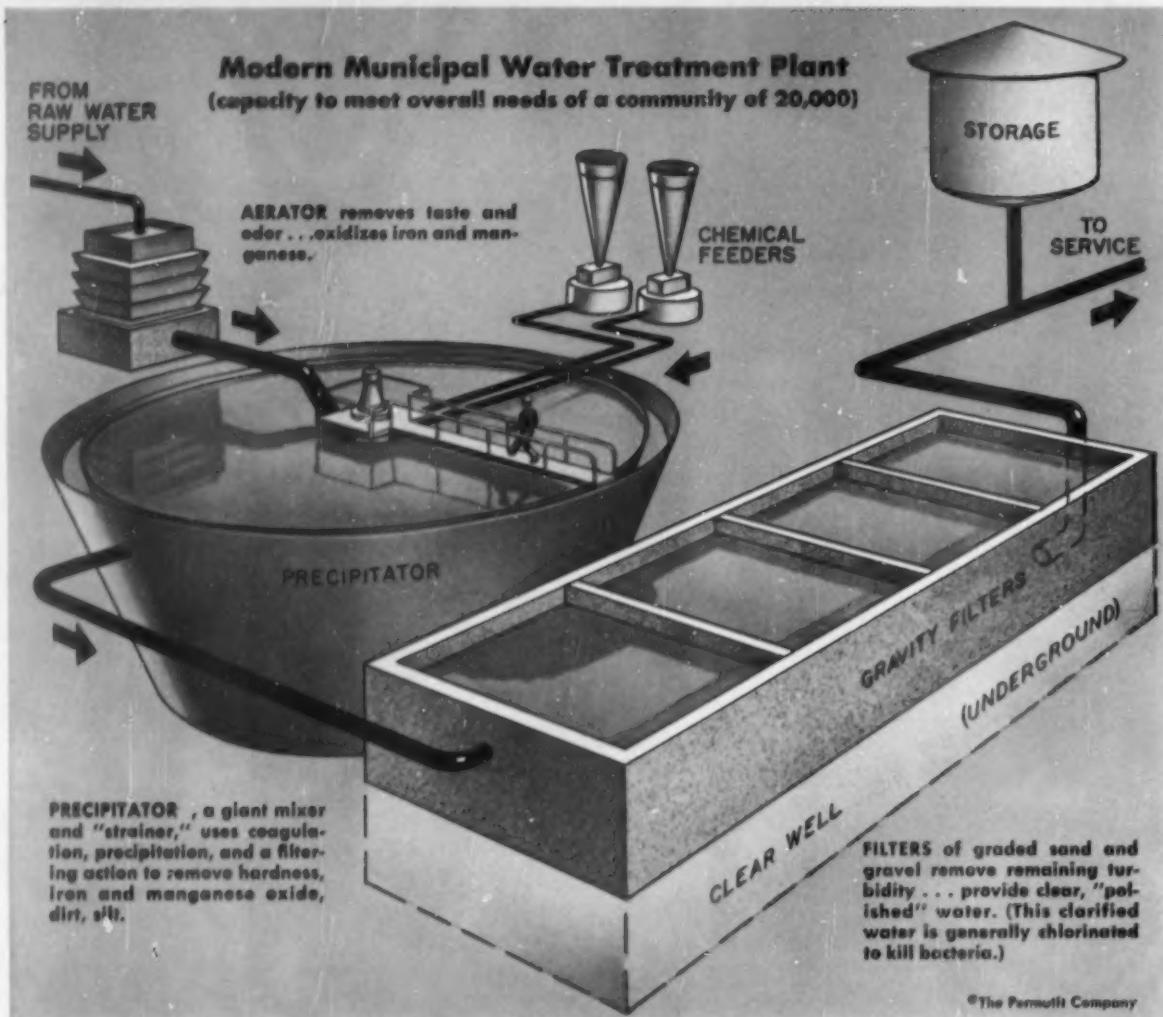


GEARMOTORS
Right Angle Type
up to 430:1 ratio

give
your
brains
a chance

WATER:

Averaging 5¢ a ton "delivered," city water is a bar-gain . . . but costs may go up as supplies dwindle.



City Water Needs: Up 50% by 1975

U. S. municipal water utilities distribute more "tonnage" in one day (16% billion gal. or 68 million tons) than the nation's steel industry puts out in 6 months! But . . . demands by small industry, business and homes are growing sharply with a total rise of 65% since 1940. About 40% of leading U. S. cities are already in tight supply, limiting their industrial growth.

• Farsighted planning now will save money for all water users . . . and prevent serious shortages that could imperil health and fire protection. Here are 3 ways capacity of existing water works can be increased: 1—Use the most plentiful water supply—river, lake

or well—even though it may be lower grade. Today's water conditioning equipment can bring it to top standards. 2—Convert an existing settling basin to a modern *Precipitator* . . . to increase its capacity 2 to 4 times and save on construction costs. 3—Replace natural zeolites in water softeners with a highly efficient ion exchange resin such as "Permutit Q" . . . to increase output up to 200%.

• Pioneer and largest firm in the business, The Permutit Company, designs or makes all the equipment shown above, also softeners, degasifiers, control panels, ion exchange resins, special valves, etc. As a result, Permutit supplies and

stands back of the complete water treatment plant . . . no matter how large or small.

• If your problem is Water . . . for industrial, public or home use . . . we'd like to discuss it with you. Address: The Permutit Company, Dept. BW-9, 330 West 42nd St., New York 36, N. Y.

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PERSONAL BUSINESS

BUSINESS WEEK
SEPT. 3, 1955



This is a good time to consider giving a contribution to your political party. It's an especially good time from the party's point of view.

Even at the height of a hot, close political campaign, the parties have trouble getting enough money—only two out of every 100 citizens made any political contribution in 1954. During off-years like this, contributions fall to almost nothing. And like any organization, political parties need money to keep operating.

One official of the Democratic Party puts it this way: "Few people realize how hard it is to get money for politics—good, clean, legal money."

Who is to blame? Both major parties admit that it's the fault of their organization more than lack of interest on the part of the people. Says a Republican official: The real money has to be solicited. And too many people aren't solicited at all. What's essential is the door-to-door campaign—even for the small contributions.

This doesn't mean that both parties won't welcome voluntary contributions. In fact, they encourage it. But the catch here is to give most effectively. While every dollar helps, you can stretch it by giving properly.

First point is to remember that there are limitations on what you can give legally. Under the federal Corrupt Practices Act, each individual can give no more than \$5,000 in any calendar year for politics on the national level. In addition, separate state laws may make further limitations and provisions.

But as in most laws, there are loopholes. For example: The \$5,000 limitation applies to individuals only. Thus a man's family—his wife, children, grandchildren—can each give \$5,000 in their names.

Likewise, there's a limit on the amount any candidate can spend in a campaign. Example: The federal law normally limits expenditures to \$10,000 for a candidate for senator, \$2,500 for a candidate for representative. And some state laws prescribe a lesser amount.

However, this limitation is in addition to certain other things. Thus you can pay a candidate's printing bills for him, or supply his headquarters rent-free, and the like. (But that cost is part of your legal limit.)

One of the big problems for the individual is figuring out how to give; generally he wants to earmark a contribution for or against a specific candidate or issue.

Here's a rundown of the main areas for giving, in terms of what you can expect in the way of results:

- For over-all use, give the money to the party's National Committee. If you send it to the county finance chairman, it will be dribbled through the whole party.
- Limit your money to state use alone by contributing to your party's state finance committee.
- If you're interested in party legislation, make out your check to the party's Congressional or Senatorial committee. A lot more of your dollar will go to that purpose than if you send the money to the party as a whole with a specific request for its use.
- Finally—and best understood by the public—is to give money for the election of specific candidates. In that case, it's best to send it directly to the candidate.

PERSONAL BUSINESS [Continued]

BUSINESS WEEK
SEPT. 3, 1955

But political experts point to a possible danger on this last point. Too often, individuals give money to candidates who don't need it: Their effort is wasted because it's for a shoo-in. So, especially if your goal is more legislation by your party, it's best to pick a man you have never heard of who is in a tight race, give the money to him.

One last and highly important point: If you make a contribution of more than \$50 within one calendar year for candidates in two or more states, you must file an itemized, detailed statement of such expenditure with the Clerk of the House of Representatives.

Also check your state laws. They may require filing of contributions as well.

—•—
The right pencil for the right job can mean a lot in efficiency and untroubled feelings. In wooden pencils alone, there are some 350 different types and colors on the market, so you can find one for every job.

Commonest type is the No. 2 pencil, known as the "quality" pencil in the trade. It's soft enough for easy writing, hard enough to keep the point from wearing too fast. But you'll find a softer pencil best for fast note-taking, a harder one good for such jobs as making several carbons.

Lead pencils come in two general types—regular and drawing (or drafting). Regular pencils are numbered from 1 (softest) to 19 (hardest). The numbering system on drafting pencils is different; experiment until you find the hardness you like.

In some offices, different colored pencils are assigned to different executives. Since there are about 72 standard colors, there's not much chance of repeating in most companies.

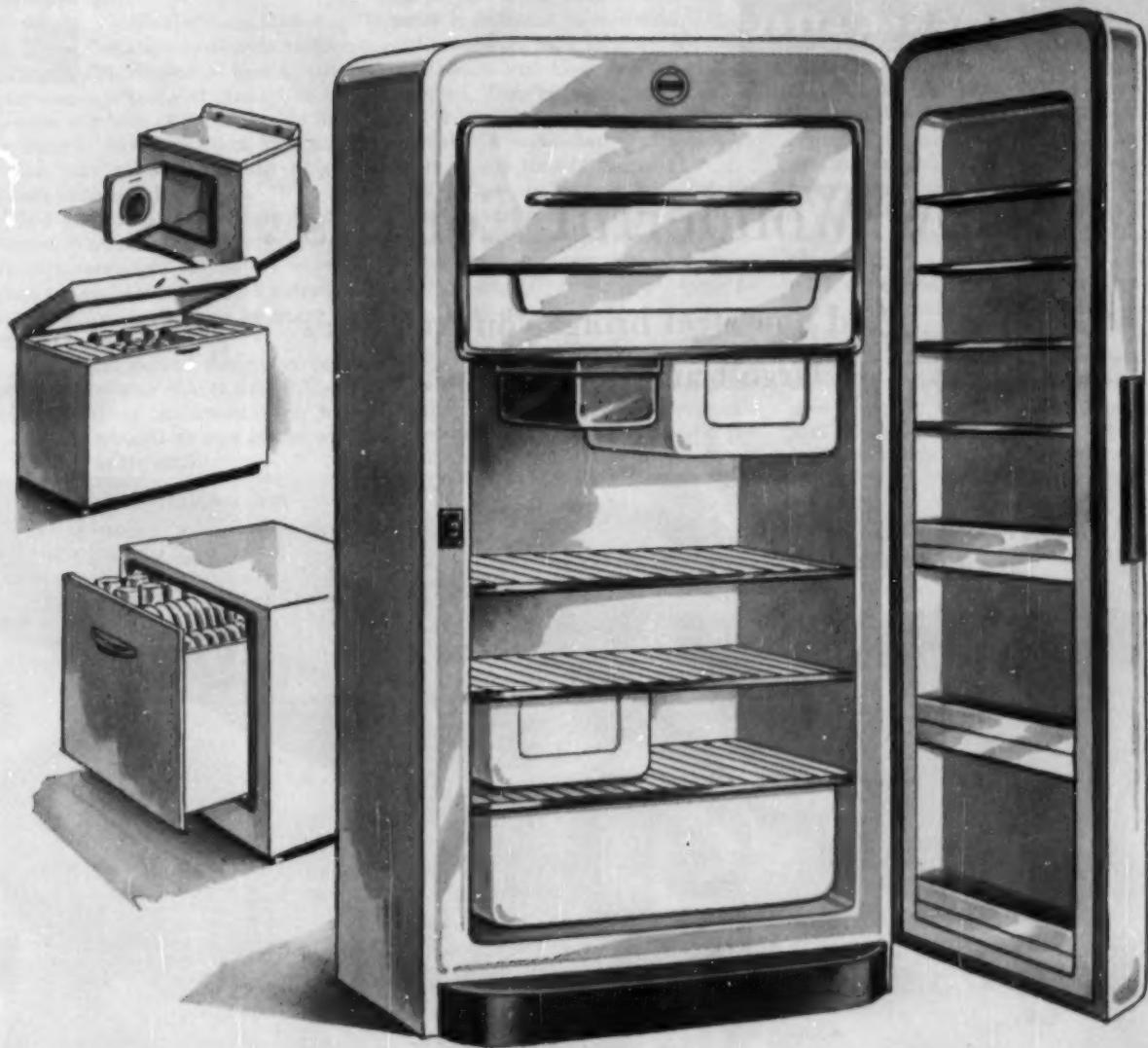
Colored pencils are also good if you are worried about your writing being changed. So are indelible pencils, of course. (Incidentally, forget the myth that indelible leads are poisonous. If you put one in your mouth, your tongue will take on a purple hue. The lead is slightly antiseptic.)

For youngsters going off to school for the first time, get an over-size pencil. It can be gripped more easily, has softer lead for less pressure.

—•—
Motorists driving between New York and Chicago will be able to save about three-and-a-half hours after Oct. 1, when the 241-mile Ohio Turnpike opens. That leaves only the 150-mile Indiana toll road—to be opened about a year from now—to complete the 812-mile turnpike system linking the two cities.

—•—
Clinical studies on a new drug, Equanil, show quick and safe relief to patients suffering mild neuroses. Unlike most sedatives, it leaves no after-effects, is non-habit forming. It will soon be available to physicians for prescription use.

—•—
Drugstores and newsstands now sell small, pocket-sized road maps called "Trip Finder." Each of 16 maps covers a certain section of the U. S. Maps operate on a "slide-rule" principle, which immediately gives mileage between major cities. You can either get maps individually, or buy all 16 as a set to cover the entire country.



Sealing unlimited!

Enjay Butyl is replacing other rubbers in more and more applications. And at a lower cost. Many appliance manufacturers, for instance, are finding that in almost every type of seal, Enjay Butyl cuts cost—yet contributes towards making a better product. Seals made from Enjay Butyl stay like new, thus keeping appliances operating like new. Its applications in the appliance industry are virtually unlimited!

If you make a product in which rubber is used, or might be used, why not contact the Enjay Company? Our technical consultants might have very good news for you about the use of Enjay Butyl in your product. News about lower costs and higher efficiency. Why wait?



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Enjay Butyl is the super-durable rubber with outstanding resistance to aging • abrasion • tear • chipping • cracking • ozone and corona • chemicals • gases • heat • cold • sunlight • moisture.

35 SUCCESSFUL YEARS OF LEADERSHIP IN SERVING INDUSTRY

THIS IS NATIONAL STEEL

How Wonderful Corn Is . . .

And how steel brings you America's
largest and oldest crop . . .



Corn.

Golden Bantam, Shoe-Peg, Country Gentleman, Golden Cross—and a dozen other varieties—picked and packed at the precise moment of perfection to lock in hearty flavor, protect rich food value, add variety and zest to our meals year round.

It's grown in every state in the Union. It's our oldest and largest crop. In fact, more land is planted to corn than to any other seed. And botanists say it grew in America as many as 60,000 years ago.

Corn. And do you know how most of it gets to your dinner table? About 80 percent of all sweet corn harvested is brought to you in one way. That is in tin cans.

Advantages of tin cans

There are many reasons why about 50 percent of our food supply is preserved in tin cans. Actually, a can is

99 percent steel, coated with tin to make it resistant to corrosion.

Tin cans are easy to carry. You can drop them and they don't break or shatter. They're easy to store, a source of a complete meal. They make available a wide choice of delicious foods at any time of the year.

What's more, tin cans are sanitary. They're used only once. They're economical, both for the canner and consumer. And so many things—such as food, paint, oil, beverages—come to you in tin-coated steel.

National's Role

The ever-increasing list of items made available to you in cans is the result of constant cooperation between the steel mill and can maker in the devel-

opment of new and improved types of tin plate needed to meet widely varying product requirements.

National Steel is a leading supplier of both electrolytic and hot-dipped tin plate. Its Weirton Steel Company is one of the largest producers of this product needed for the more than 35 million cans made each year.

Tin plate is, of course, just one of many steels made by National Steel. Our research and production men work closely with customers in many fields to provide better steels for better products.

For, at National Steel, it is our constant goal to produce steel—America's great bargain metal—of the quality and in the quantity wanted, at the lowest possible cost to our customers.

NATIONAL STEEL

GRANT BUILDING



CORPORATION
PITTSBURGH, PA.



America's bountiful corn crop is harvested in every state in the Union. Picked at the peak of perfection, it is rushed to nearby canneries for quick packing.



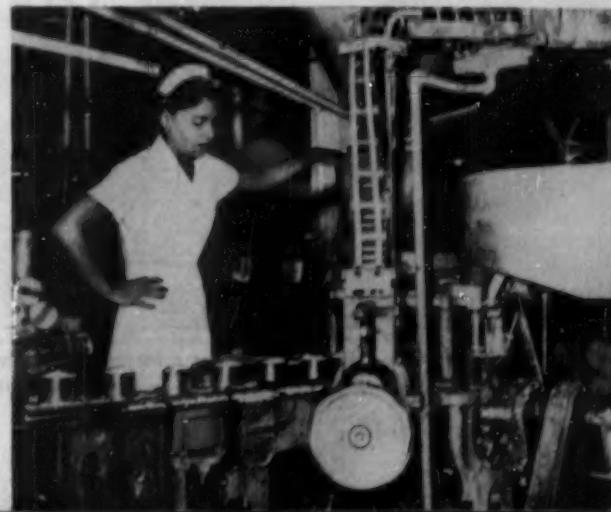
At canneries, ears of corn are husked, cleaned and carefully inspected for freshness and ripeness, so that only the finest of the crop is packed in sanitary cans.



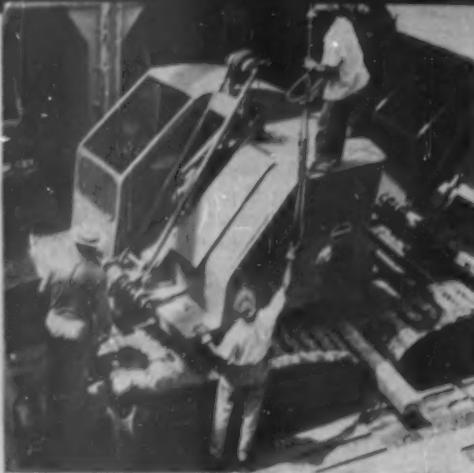
SEVEN GREAT DIVISIONS WELDED INTO ONE COMPLETE STEEL-MAKING STRUCTURE

Great Lakes Steel Corporation • Weirton Steel Company • Stran-Steel Corporation • The Hanna Furnace Corp. • National Steel Products Co. • Hanna Iron Ore Co. • National Mines Corp.

Usually within hours after harvesting, corn is packed in hermetically sealed, tin-coated cans of steel which lock in the rich flavor and vitamins for you.



COMPANIES



HEAVY MACHINERY goes into freighter Belmonte, along with . . .



LIGHT HARDWARE such as stovepipes for workers' homes, and . . .



EVEN A FIELD OFFICE for a big pipeline project in Turkey.



Lee Construction Corp. of Houston packs and ships anything you need for a construction job anywhere. Above, Pres. A. D. Lee (left) sees a shipload off for Turkey with Capt. P. P. Moeller.

Texas Company Wraps Up Big Construction Package

The \$2.5-million cargo now being ferried by the M. S. Belmonte (pictures) from Houston, Tex., to Iskenderun, Turkey, represents the latest, biggest, and probably the speediest "package deal" of Lee Construction Corp. of Houston. This company, headed by 39-year-old A. D. Lee, makes a profitable specialty of assembling, packaging, and shipping everything you need for a construction job anywhere in the world.

The Belmonte's assorted 5,000-ton cargo includes housing, equipment, and materials for building a 450-mi. pipeline in Turkey running inland from a point near Iskenderun. Associated Pipe Line Contractors, Inc., of Houston, which has the construction contract, turned over to Lee—for a fee of some \$300,000—the complete job of assembling and getting to Iskenderun everything except the actual pipe.

• **Special Knowhow**—In its 10-year life, Lee Construction Corp. has done this package job on complete refineries, chemical plants, oil drilling equipment, and a host of other projects. It now has a clientele of about 30 large companies, mostly in oil, gas, and chemicals, that use its service regularly.

It's a business that requires a special kind of knowhow—such out-of-the-way things as bridge capacities in Venezuela, the kind of electric current used in provincial Brazilian cities, the climate and terrain of remote and inaccessible parts of the world.

• **Speed**—It also takes fast work. After Associated Pipe Line got the contract for the line in Turkey (which is being built for the Turkish government with aid funds as part of the NATO defense setup), Associated came to Lee and said, in effect:

"We want everything needed to build a pipeline in Turkey, except our pipe. You do it and get it there."

Three weeks later, Dock 8 at the Port of Houston was heaped high with crates of equipment ready to be loaded on board, the M. S. Belmonte had been located and chartered, export licenses had been obtained, forwarding papers prepared, stevedoring and loading provided for, and arrangements made for the unloading at Iskenderun. The Belmonte sailed last month.

• **Variety**—It wasn't quite so simple as it sounds. As part of its job, Lee Construction had to design, build, and package for shipment a village-camp for 48 principal workers, made up of 11 portable, skid-mounted buildings, completely furnished, with built-in plumbing and wiring.

Lee also had to get special State Dept. clearance for a Cessna 180 airplane and a Geiger counter included in the shipment.

Besides these items, the Belmonte will disgorge when it docks at Iskenderun in about a week:

• 65 units of automotive equipment—pickup trucks, winch trucks, tank trucks, trailers, passenger cars, even an ambulance.

• 21 Caterpillar tractors, two ditching machines, nine backhoe shovels, five air compressors, six dope kettles, four skid-mounted tanks.

• 180,000 lb. of welding rod, 4-million lb. of bituminous coating material and pipeline enamel, 140,000 lb. of glass fiber and asbestos pipe wrap, 100,000 lb. of pipe and fabricated steel.

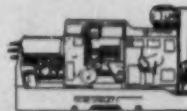
• 500,000 lb. of miscellaneous small pipeline machinery and tools—all in specially designed crates.

All that Associated Pipe Line will have to do will be to move the stuff, after it's unloaded, to the pipeline location.

• **Buildup**—Pres. A. D. Lee claims that no other company provides this com-



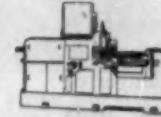
THERE'S SAFETY IN NUMBERS



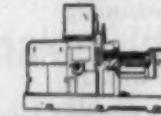
BAR AUTOMATICS
4 Spindles — 7 sizes, 1 to 7½"
6 Spindles — 9 sizes, 1½ to 6"
8 Spindles — 6 sizes, 1½ to 6"



CHUCKING AUTOMATICS
4 Spindles — 2 sizes, 10 and 12"
6 Spindles — 4 sizes, 5½ to 12"
8 Spindles — 3 sizes, 6 and 8"



TURRET LATHES
Bar-Type — Fully Automatic
Single Spindle — 3 sizes, 3½ to 8½"



TURRET LATHES
Bar-Type — Fully Automatic
Single Spindle — 12" capacity.



CHUCKING AUTOMATIC
Single Spindle ("Chuckmatic")
to 12" capacity.

Performing intricate and complex machining operations in seconds where, only a few years ago, minutes—even hours—were required, today's automatic screw machines are marvels of production.

In the final analysis, however, the ability to get all the production these machines are designed to deliver depends upon operator experience.

And of equal if not greater importance is the background of tooling experience the machine builder can deliver.

With more Acme-Gridleys in use over the years than any competitive machine, it's a safe bet you'll also find more men trained in the operation of Acme-Gridleys than in any other "automatic."

There is safety (for you) in numbers. All this operator experience, plus the tooling experience gained in more than sixty years by National Acme (more than 300,000 tooling case histories) is available to strengthen your competitive position.

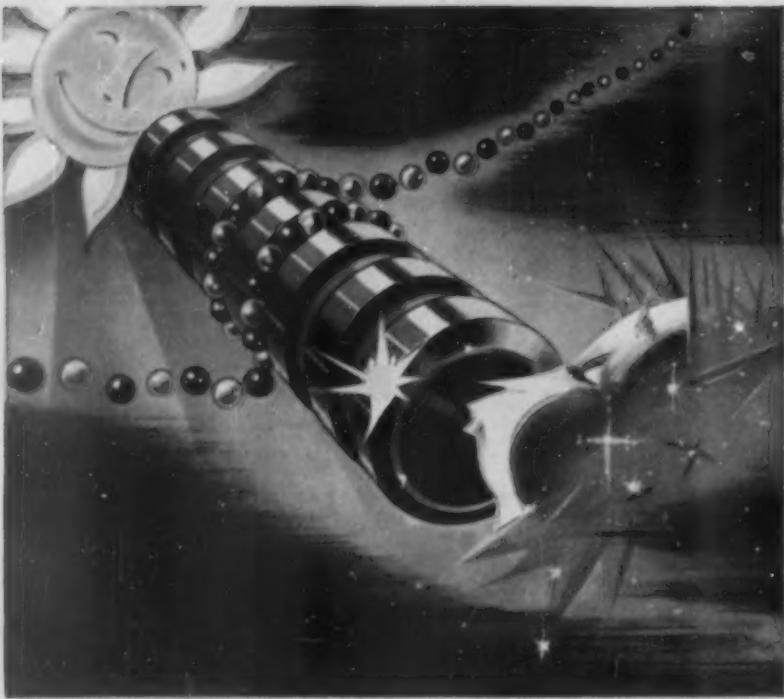
Why not put this experience to work in your shop?

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OUR JOB TO PROVIDE THE **RIGHT** MACHINE FOR YOUR JOB!

See us at the Machine Tool Show Sept. 6 through 17. Booths 324 and 705



THIS SCREW ROLLING ON BALLS operates in high- and low-temperature areas

Over a wide temperature range, AEROL Ball-Screws which move entirely on steel balls eliminate the need for lubrication. They operate in high-temperature areas without danger of fire and thinned-out grease and in low-temperature areas without the problems of stiffened grease and sluggish operation. They also assure fast, precise, continuous positioning down to near-zero tolerance.

Replace the common high-sliding-friction screw with an AEROL Ball-Screw mechanism, and you can almost double drive efficiency, allowing you to save on motor size and weight, cost, space and electricity required.

These AEROL Ball-Screws are at work now on aircraft, on trucks and cars, on machine tools, on standard and special equipment of all kinds.

There may well be a money-saving opportunity to put them to work in your business. To get more information, write for our free booklet.

Cleveland Pneumatic
Tool Company CLEVELAND & OHIO

DEPARTMENT B-955

BALL-SCREW MECHANISMS • AIR-OIL IMPACT ABSORBERS

WORLD'S LARGEST MANUFACTURER OF AIRCRAFT LANDING GEARS



plete assembling, packaging, and shipping service, including the forwarding and ship chartering. (The initials stand for Amesbury Duane, but he's generally known as "Bud.")

Lee credits his experience in the Texas oil fields for a lot of the know-how in moving things. A drilling rig, he points out, gets moved every so often—and the moving is a tricky job.

It was in 1945 that Lee went into business for himself and organized Lee Construction Corp. to offer expert export service. He began in a modest way with crating and packing jobs—something along the lines that have been further developed by the export-packing companies such as Jerome F. Gould Corp. of Brooklyn, N. Y. (BW—Sep. 5 '53, p128).

In the decade since, Lee Construction has greatly expanded its services and its business. Lee is close-mouthed on financial matters, but it is known that the company now does an annual business well into seven figures. (The employees, incidentally, share 65% of the profits.)

• **Experts**—Obviously, an off-beat operation like Lee's couldn't be carried out without some highly specialized and varied knowhow. Lee's organization of about 100 men consists of all kinds of experts—men who design and build boxes, mechanics who disassemble and reassemble complicated machinery, insurance experts, men who know how and where to procure anything anybody could possibly think of—and not the least important, men who know how to address things so they'll arrive at the right place at the right time.

Take the case of the Brazilian client who had ordered a lot of U.S.-made electrical appliances and wanted them shipped to his inland city in Brazil—but didn't know what kind of current the city had. Lee's men could tell him: One part of the city used a.c., the other half d.c.

• **Jobs**—Lee Construction operates anywhere in the U.S., ships anywhere. It has done jobs on both coasts, sometimes from several places at once. All the coordinating is done in Houston.

When Glenn McCarthy first went into Bolivia on his big oil deal two years ago, Lee crated and shipped over \$1-million in drilling equipment. The stuff first went to Buenos Aires, then 1,800 mi. by rail across Argentina and into the wilds of Bolivia. The dimensions of some of the living quarters designed by Lee were determined by the size of a tunnel they had to go through. One of Lee's transportation experts had those figures handy.

Other jobs done by Lee Construction:

• For the U.S. government—A 40-carload shipment of ditching machines, cranes, refinery equipment, and the like



ONE OF THE FIRST new Blue Brute rotary compressors at work on a new home development in New York. Worthington distributors everywhere are now demonstrating and delivering these new Blue Brutes.

New compressor makes life easier for construction men

It's the brand-new Blue Brute Rotary Compressor — Worthington's latest contribution to the construction field.

Cutting start-up time, operation troubles and expenses on construction jobs is just what it was designed for. The Blue Brute Rotary picks up where other rotaries leave off. In the first place, the new Blue Brute is equipped with a *clutch* — to make for easy cold-weather starting. Then there are its *self-draining cylinders* that keep oil from clogging up the works. And for easy inspection and maintenance, Worthington engineers designed the Blue Brute so that the average mechanic

can remove and replace worn blades in minutes, using only standard tools.

Seems that almost everywhere you look nowadays, Worthington equipment is at work making life easier for us all. In power plants, factories, sewage and waterworks, Worthington engines, compressors, turbines and world-famous pumps are on the job. And take a close look at the air conditioning unit in the next store or home you visit. There's a good chance it's a Worthington, too.

Worthington Corporation, Section 4.26, Harrison, N.J.

4.26

WORTHINGTON



THE SIGN OF VALUE AROUND THE WORLD

AIR CONDITIONING AND REFRIGERATION • COMPRESSORS • CONSTRUCTION EQUIPMENT • ENGINES • DEAERATORS • INDUSTRIAL MIXERS
LIQUID METERS • MECHANICAL POWER TRANSMISSION • PUMPS • STEAM CONDENSERS • STEAM-JET EJECTORS • STEAM TURBINES • WELDING POSITIONERS

Something
goes into
this box
besides aspirin...



NATIONAL FOLDING BOX COMPANY, INC. SUBSIDIARY OF FEDERAL PAPER BOARD COMPANY, INC.

SALES OFFICES: CHRYSLER BUILDING, NEW YORK 17, N.Y.; NEW HAVEN AND VERSAILLES, CONN.; BOGOTA, N.J.; BOSTON AND PALMER, MASS.; STEUBENVILLE, OHIO; PHILADELPHIA AND PITTSBURGH, PA.
FOLDING BOX PLANTS: BOGOTA, N.J.; NEW HAVEN AND VERSAILLES, CONN.; PALMER, MASS.; STEUBENVILLE, OHIO; PITTSBURGH, PA.
PAPER BOARD MILLS: BOGOTA, N.J.; NEW HAVEN, CONNTVILLE AND VERSAILLES, CONN.; READING, PA.; STEUBENVILLE, O., WHITE HALL, W.V.

was sent to the Russian Ukraine in 1946 for UNRRA.

• For Dow Chemical Co.—A complete hydrochloric acid plant was dismantled, packed, and shipped from Houston to Caracas, Venezuela.

• For Foster Wheeler Corp.—Two complete refineries were shipped from Houston to Cochabamba and Sucre, Bolivia. Lee bought the materials all over the U.S., had them sent to Houston for checking and packing.

• Branching—Lee Construction's strapping, 6-ft., 200-lb. president hasn't confined his activities to this company, but has branched out in other lines.

Two of his other companies, however, are closely tied to the work of Lee Construction. One of these, American Supply & Equipment Co., is really a subsidiary operation of Lee Construction; it exists solely to procure things wanted by Lee's export clients. The other, Lee Shipping Co., is an authorized forwarding company that can operate out of any port in the U.S.

Two years ago, Lee formed the Lee Corp., which owns and leases out big cranes—50-ton jobs and bigger. Right now, it has cranes rented out in such scattered places as Florida, Minnesota, California. He also owns 50% interest in the Ray-Lee Oil Co. And within the past two months, he bought up 10,000 acres in Wyoming in an area said to contain rich deposits of selenium and uranium.

COMPANIES BRIEFS

Foremost Dairies, Inc. (BW-Jun.25 '55,p178) is talking merger with Western Condensing Co. of Petaluma, Calif., a major producer of whey. Talks had been interrupted by a proxy fight against Western's management.

David B. Lichtenstein's Liberty Loan Corp. of St. Louis is growing fast. It has 34 more branches than a year ago, a gain of 52%, and has gone into six additional states; loan volume in the first six months exceeded \$21-million compared with \$14.4-million in the 1954 period; earnings rose from \$388,304 to \$406,819. Lichtenstein acquired control of Liberty as a byproduct of a court fight with Donald L. Barnes over management of American Investment Co. (BW-Mar.5 '55,p80).

San Diego's baseball club, the Padres, has been bought by Westgate-California Tuna Packing Co., effective Sept. 11.

Georgia-Pacific Plywood Co. is getting deeper into manufacture of pulp. It just bought 7½-billion board feet of pulp timber in southeastern Alaska.

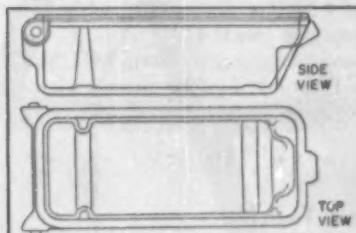


CORNING GLASS BULLETIN FOR PEOPLE WHO MAKE THINGS

Bold mold

It has come to our attention that often simplicity embraces complexity.

A good case in point: the dental tray you see pictured. It's a relatively simple outfit for sterilizing small instruments by immersion. A product of the Bard-Parker Co., it's made of a PYREX brand glass, metal, and rubber.



Our contribution to the working simplicity of this sterilizer is the glass body. Actually, this main component is a quite complex, one-piece object, *molded* of one of our most versatile glasses, PYREX brand No. 7740.

A close look at the illustration will give you some idea of the many angles, ridges and such to be calculated in making the molds in which this tray is pressed. Yet, its precise tolerances allow the metal and rubber cover to fit and hinge on the glass lugs, and the inside metal tray rests evenly on the built-in glass supports for draining.

At the risk of repetition, we mention again that all this is *molded* in one piece of glass.

Which brings us to the point that under Corning's scrutiny, glass can be readily made in shapes and for purposes that may never have occurred to you as possible with so hard, durable, and seemingly inflexible a material.

(And the fact that this item is made of a PYREX brand glass and stands up to the chemical action of the antiseptic solution should not be overlooked.)

From this bold mold you can induce that glass, economically mass produced by any one of a variety of processes, may hold the answer to some ticklish design and/or production problem of yours.

For nothing more than postage you might start finding out with a booklet called: "B-84—Manufacture and Design

CORNING GLASS WORKS, 20-9 Crystal Street, Corning, New York

Please send me the material checked below:

B-83: "Properties of Selected Commercial Glassware." B-84: "Manufacture and Design of Commercial Glassware." Booklet: "Glass and You."

Name _____

Title _____

Company _____

Address _____

City _____

Zone _____

State _____

of Commercial Glassware." It tells about blowing, pressing, multiforming, sealing, assembling glass to metal, and other factors of interest to men of practical turn. Check the coupon for your copy.

Making light of it

Campers, world travelers and those deprived of electrical illumination have long turned to portable Coleman lanterns for light.

Pressurized gasoline is burned in a thorium mantle. These light sources give off with some 300 candle power, about what you get from a 300-watt bulb.



To achieve such an output, the mantle reaches and holds at about 3,000° F.

Problem: What kind of glass chimney will stand up near this internal heat, the differential ambient temperatures, and the rugged handling such a portable light is bound to get?

Answer: This is another example of where a PYREX brand glass solved a critical design problem, this time because of its low coefficient of expansion and high resistance to abrasion and physical shock.

For a brief rundown on the physical properties of PYREX brand glasses and other glasses, ask for our Bulletin B-83.

Godet (or how to spin a yarn)

Godet is the name given to a highly talented wheel used for spinning rayon yarn.

This intelligence by itself is neither startling nor revealing. And this picture tells you little other than that godet wheels are made of glass in dimensionally accurate intricate shapes.



Why we discourse on godet wheels (aside from the fact that we make them) lies in the somewhat unusual circumstances under which they operate.

First, viscose (cellulose solution in a mixture of carbon disulphide and sodium hydroxide) is extruded through a spinnerette into a solution of sulphuric acid. The coagulated yarn, comprised of as many as 800 delicate filaments, must then be pulled out of the acid, washed, and stretched.

Here's where the godet wheels take over. One, with a stream of hot wash solution running over it, pulls the yarn and snubs it. The other puts in the stretch.

And why glass for this chemical yarn spinning? First, there's the very important consideration of *dimensional stability*. This glass has it. Good thing, too, since any change in wheel size or shape, due to the effects of the acid, would change the wheel's peripheral velocity, and adversely affect the yarn stretch.

Moreover, the smooth finish of the glass wheels insures against fraying the fine filaments.

These wheels are also impervious to the corrosive action of both the acid and hot wash water.

And, glass is easily shaped to the complex fluted form required—in quantities, at reasonable prices.

Here's a spinning example of Corning custom engineering in glass—the right balance of the right characteristics—to do a very special type of job.

More examples are spelled out in "Glass and You." It's a good primer for learning a great deal about today's engineered glasses. Use the coupon. Free.

CORNING GLASS WORKS, CORNING, N. Y.

Corning means research in Glass



In Management

Insurgents Seek Court Action In Minneapolis-Moline Fight

The fight for control of Minneapolis-Moline, farm machinery manufacturer, moved into Minneapolis federal district court last week. A suit, brought by an insurgent stockholders group unhappy over the company's recent deficits, asks court action to force M-M to open its stockholder lists and recent minutes of director and stockholder meetings.

The insurgent group, which claims to hold 80,000 of M-M's 903,000 common shares, is led by Edward S. Reddig, executive vice-president of White Motor Co., Cleveland. He says he wants the information so he can contact stockholders and force management to call a special meeting to elect a new board. Next step would be either sale of M-M to a larger company (Ford has been mentioned, but denies any interest) or hiring a new management.

Minnesota law provides that stock registry lists shall be open to any stockholder for "proper" purposes, and this is the issue the district judge will decide.

The battle for control of the 125-year-old company was touched off by (1) the sharp drop in farm machinery buying last year, and (2) rapidly shrinking defense orders this year.

In fiscal 1954, M-M's sales amounted to \$77.4-million, which resulted in a deficit of \$44,000. The year before sales totaled \$105.5-million and profits ran more than \$2-million. In six months of fiscal 1955, operations have produced a \$700,000 loss, although second quarter business returned a quarter-million dollar profit.

But defense contracts, making up a big portion of M-M's former business, have been dwindling. Defense order billing slumped from \$12.4-million in the first half of fiscal 1954 to \$2.5-million in the first half of fiscal 1955.

This year, M-M Pres. W. C. MacFarlane says the company will be in the black. Says MacFarlane: "We intend to oppose Reddig's group. Reddig has stated that this is the age of the 'grouping of the giants.' We believe a relatively small business will continue to have a place in the economy and we believe that the sale, merger, or liquidation of Minneapolis-Moline would not be in the best interests of its shareholders, employees, dealers, or farm customers."

In Fair Weather and Foul Corporations Give Generously

The floodwaters left by Hurricane Diane (BW—Aug. 27 '55, p26) had scarcely receded when corporations poured special gifts into the Red Cross disaster fund. General Motors Corp. gave \$100,000; Jersey Standard, \$50,000; American Tobacco and the New York Times, \$10,000,

and many other gifts ran to four figures. It was a reminder of management's new role as philanthropist.

The American Assn. of Fund-Raising Counsel, a group of 18 fund-raising companies, finds that, out of \$5.4-billion of total giving in the U.S. last year, business contributed slightly more than \$400-million. This year, corporations will be asked to give upwards of \$500-million: for community chests and united funds, \$115-million; new hospitals, \$180-million; higher education, \$75-million; Red Cross and national health agencies, \$50-million; churches, YMCA, and others, \$80-million or more.

Last year's giving by business was more than four times the \$98.3-million total of 1942. Yet 1952 income tax returns, the latest available, show corporations donating only 1.03% of their net incomes. As much as 5% could be deducted for tax purposes.

Industries vary in their benevolence. The construction industry gives 1.74% of its net income; wholesale and retail trade, 1.53%; professional firms, 1.46%; manufacturers, 1.13%; agriculture, 0.81%; finance, banking, and insurance, 0.62%; mining, 0.46%; transportation and public utilities, 0.44%.

Size matters, too. Corporations with assets under \$50,000 give at the rate of 4.24% of net income, while those with assets over \$100-million give 0.43%.

The association's executive director, David M. Church, notes two trends: (1) Business is giving more and more money and (2) it is attaching fewer strings to gifts.

How Businessmen Teach Educators About Industry

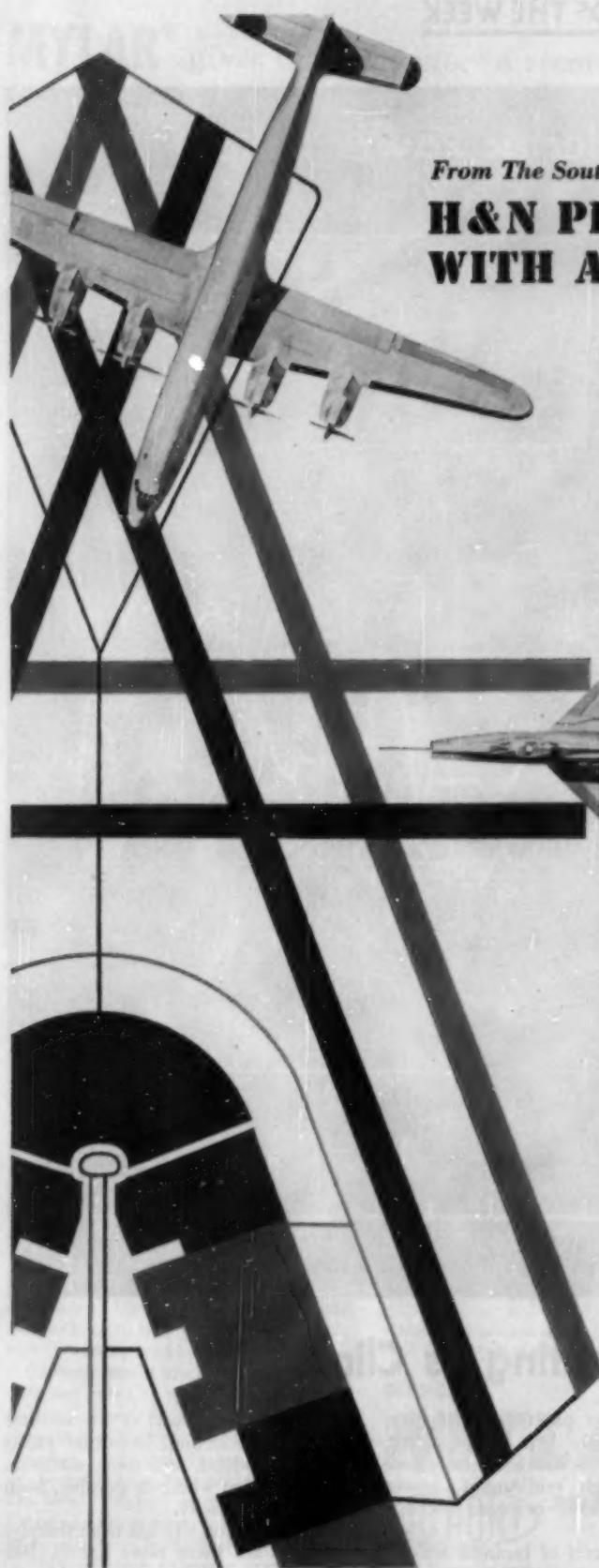
Besides financial aid to education (see above), businessmen are turning to other ways of increasing educators' understanding of industry. Three plans in operation this summer give you an idea of what some companies are doing.

McDonnell Aircraft Corp. in St. Louis bolstered its engineering department during the summer months with 15 faculty members from Midwestern colleges. The addition of these highly qualified mathematicians, physicists, aeronautical and other types of engineers, afforded the company some temporary relief in an acute engineer shortage. But, equally important, McDonnell thinks its summertime engineers will go back to their classrooms with some new practical knowledge, and perhaps will make a few friends for the company among the graduating class.

Bakelite Co., a division of Union Carbide & Carbon Corp., for the fourth consecutive year, has employed six teachers from local grade and high schools in its Bound Brook (N. J.) plant for the summer.

Bakelite believes the experience will enable the teachers to give students more up-to-date information on how industry operates. It hopes this eventually may help reduce the shortage of technical people.

General Electric Co. has a slightly different approach. This summer, for the tenth year in a row, GE has footed most of the bill for sending 200 secondary school and college science and math teachers back to college for advanced study. It also arranged a few plant trips for them.



From The South Pacific to The Continental U.S. ...

H&N PROJECTS KEEP PACE WITH AIR PROGRESS NEEDS

Holmes & Narver's 16 years of extensive experience in aviation facilities includes every engineering design and construction service on complete airfields; site selection, master planning, drainage control, specialized assembly, testing buildings and advanced design of airstrips. The engineering staff is equipped to handle projects in the newer, largely unexplored areas of modern flight—such as high pressure test cells.

Scope of Operations: For the past six years and at the present time, Holmes & Narver has been the engineer, constructor and operator of the U.S. Atomic Energy Commission's great Pacific Proving Grounds. Included is every element of engineering and construction required, as well as the vital factors of procurement and logistic support.

Industrial Projects: For Douglas at El Segundo—engineering, controls lab and mock-up buildings. For Hughes at Tucson—engineering of guided missile testing, storage, assembly and checking facilities. Design and construction of the Bendix Engineering and Lab Building in the San Fernando Valley, California ... plus many other specialized jobs.

Whether you plan to expand existing facilities or build "from the ground up"...you are invited to call on Holmes & Narver.



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CHARTS OF THE WEEK



YOU BENEFIT... by over 50 years of experience

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Splitter load-
ing highway
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Revolator Up-
lifters: 1000 lb.
and 2000 lb.
capacity. Also
dual capacity
hand-operated
models.

Revolator Uplifter Portable Elevator. Multiple use, multiple purpose Revolator Uplifters, products of 50 years of engineering know-how solve handling problems throughout all industry. Ideal for shop usage, Revolator Uplifters also speed handling in the shipping department with equal efficiency. The Uplifter is ideal when no shipping dock is available. Electrically-powered Uplifter portable elevators are available in either "plug-in" or battery operated models. Write for information.

REVOLATOR CO.
8711 Tomolo Ave., R. Bergen, N. J.



Being bounded by a problem in
sub-miniature design, weight and
size reduction, power and
component encapsulation?

Send today for our new 24-page catalog,
describing 450 types and sizes of
MPB's* such as these



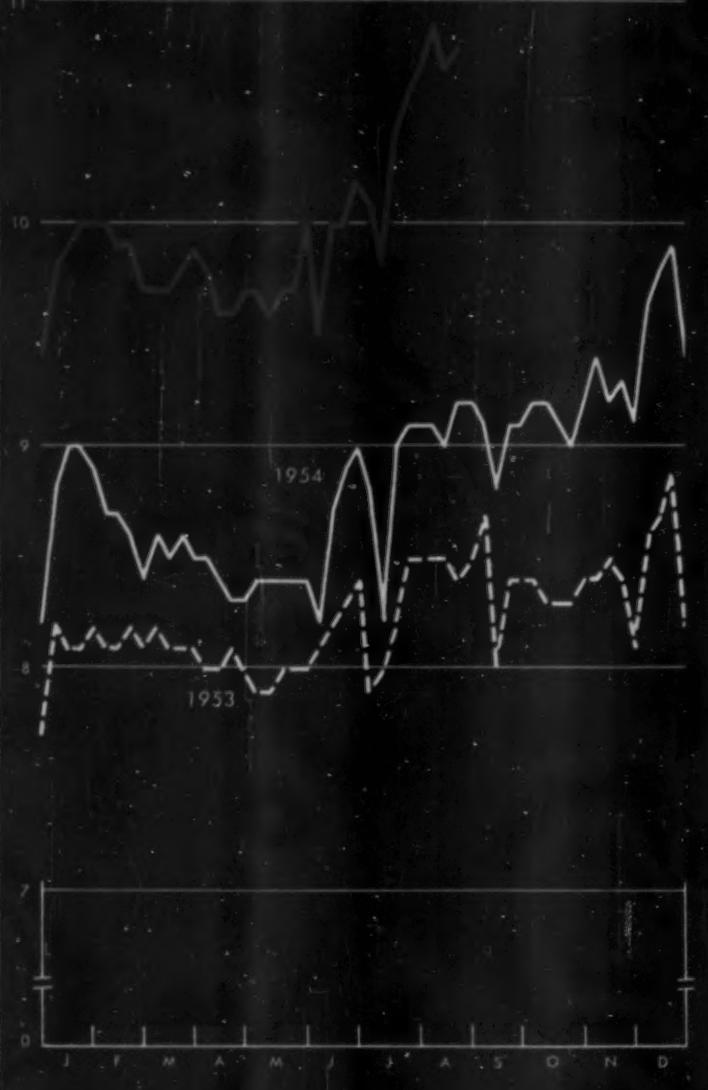
*MINIATURE PRECISION BEARINGS, INC.

11 Precision Park, Keene, N. H.

Please send MPB's new Catalog to
Name..... Title.....
Company.....
Street.....
City..... Zone..... State.....

Electric Power Output

Billions* of Kilowatt Hours



Data: Edison Electric Institute

BUSINESS WEEK

Accelerating Its Climb

Electric power production has been increasing steadily year by year. But the gain in 1955 has been far above normal. Through mid-August, power output surged 15% or more above a year ago.

The record level of business activity

accounts for a big part of the increase in power production. Industrial plants running overtime, and using machines instead of men wherever possible, burn up a lot of electricity.

Residential use also has risen sharply. Not only are there more homes, but

MYLAR® gives Comptometer® a recording belt guaranteed for life!



MYLAR® offers you almost unlimited possibilities for developing new products . . . improving old ones

An outstanding feature of the new Comptometer® Dictation Machine shown above is the magnetic recording belt made with Du Pont "Mylar" polyester film. The manufacturer, Felt & Tarrant Mfg. Co., Chicago, Illinois, reports that the high strength of this amazing film makes possible an unconditional lifetime guarantee for its Erase-O-Matic belt—against wear, tear, heat, moisture and cold.

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there are far more electrical gadgets per home. Television—and 75% of American families now have sets—uses large amounts of power. Air-conditioning

units have also been pushing up the demand for electricity not only in homes, but in industrial and commercial establishments as well.

Business Loans

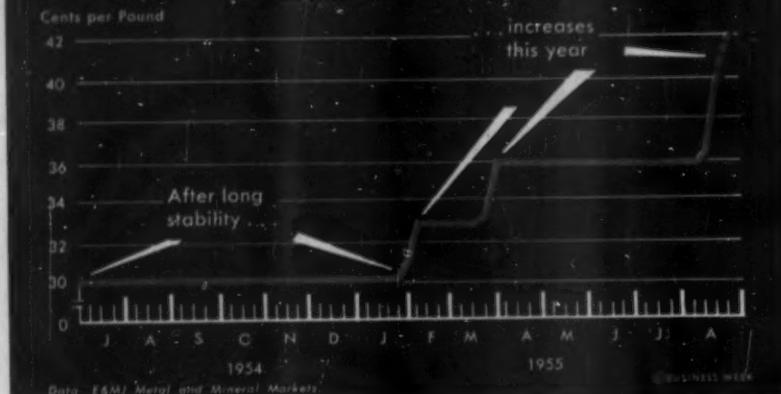


They Forgot to Come Down

Washington's efforts to tighten credit have had little visible effect on business loans so far. Last week they stood at \$3-billion above a year ago. Loans jumped sharply in mid-June to meet tax

payments, and they just never came down. And in spite of a sluggish first quarter, the total for the year to date is running approximately 3% ahead of last year's level.

Copper Prices



Strikes Gave the Push

The copper industry has been plagued by worldwide strikes for more than a year. Resulting shortages have shoved prices way up. Led by skyrocketing European prices, U.S. producers raised prices three times this year, to 40¢ per lb. Then, Anaconda Co. announced still

another increase, bringing its copper to 43¢ per lb.

The big question is whether prices are now high enough to attract more copper to the U.S., or whether European prices will continue to outreach those in this country.

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Box Score on Automation

Automation—the new technology of mechanized handling and automatic controls—has become a major force in industry. And there's a lot more of it on the way. You need only take one look at what's going on at the Chicago Machine Tool Show (page 41) to see that.

But so far automation has split U.S. opinion right down the middle. Defending it, management offers the economic axiom that any improvement that boosts productivity leads to higher consumption and employment. Labor sometimes feels that automation is synonymous with unemployment. But either way, we have had only opinions with no industry-wide statistics to back them up.

This week, *American Machinist*, a McGraw-Hill publication, is reporting on the 1956 plans for the metalworking industry. (It is principally a study of plans for capital expenditures, predicting that metalworking will spend up to \$2-billion in the coming 18 months for new tools.) The report gives the responses of metalworking companies—a sample of one-tenth of the whole industry—to two questions: How much have you automated? How has it affected your company's labor force? The answers show that both management and labor have been right in their opinions about automation; but management more nearly right than labor.

Roughly one out of five of the 1,574 companies reporting have installed some kind of automation.

Nearly every company said the main reason for these shifts to automation is the reduction of direct-labor costs. They have also enjoyed increased output, and better quality in their products.

What this has done to employment will suit both sides. But for management, the results are something more than just propaganda. They are proof that automation is more often a benefit than a menace.

More than half of the metalworkers told *American Machinist* there had been no change in their total employment since the introduction of automation. Over one-quarter had to increase their labor forces. Less than a fourth found that employment went down. The average increase in employment was 21%, around 5% more than the average drop in labor.

Salk: Truth at Last

The government deserves some faint praise for its report on the Cutter polio vaccine "incident."

Praise because the United States Public Health Service, and Surgeon General Leonard Scheele, had the scientific and moral courage to admit that its own safety tests were simply not adequate to detect the presence of live, infective polio virus in the vaccine that was being released by USPHS National Institutes of Health biologics control laboratories.

The praise is faint, however. Because the truth is the very least we have a right to expect from those charged with the administration of a health program that can mean life or death to thousands of human beings. Faint

also, because the report does little to wash away the stigma the government attached to itself in its ambiguous, vacillating, and ineffectual handling of the program.

The report explained that live vaccine slipped through undetected in vaccine produced by the Cutter Laboratories because of "inadequacy of virus inactivation and failure of the safety tests." Translated from official jargon, this simply means that no one—Dr. Jonas Salk, the National Foundation, the manufacturers, or the government—knew how to produce and test the vaccine with infallibility. This was to be expected to a certain point. It has been pointed out that it takes time for the "bugs" to be ironed out of any new drug (BW—May 14 '55, p200).

The report hinted that other manufacturers were having the same trouble as Cutter back in April when the first polio cases were attributed to the injections themselves. But it did not make clear the most telling fact of all—that NIH itself began re-evaluating its safety tests before Apr. 26, when the first Cutter case was reported, indicating that NIH already suspected its tests before the first Cutter case.

What followed was a sorry history of administrative starts and stops that rocked the nation's faith in the whole polio program until—too late for mandatory controls to be effective—new production and testing standards were worked out weeks later. By that time Cutter had taken practically the entire rap for what boils down to the "crime" of being first on the market with a product that—the government finally admits—met all government requirements at the time.

The Cutter report offers two promises: finis to the undeserved blame that has been heaped on that company's good reputation, and an object lesson in how a medical program should not be handled.

Industrially Civilized

There's one basic and highly interesting trend in American industry that you are apt to overlook if you are taking a quick look at the country, as the Russian farm delegation is. In fact, it's easy for even the historians and economists to overlook.

Pres. Leland I. Doan of Dow Chemical put it into words when he was considering profit sharing plans, vacations, pleasant working surroundings, and noise abatement in plants. "While the rise in the American standard of living has received much attention," he said, "we have been less conscious of the parallel rise in our standard of working."

"You might say," he declared, "that as a society we have taken a vote and decided that we want to spend part of the fruits of our productive efforts in such a way that work becomes a more satisfying and pleasant experience. . . . It is an indication that we are becoming more civilized economically and industrially as well as socially."



Photograph by Holland

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